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RECENT ADVANCES IN NUTRITIONAL RESEARCH

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E. V. McCOLLUM, Ph.D., Sc.D.†
BALTIMORE, MARYLAND

I. The Vitamins

The biochemists have busied themselves with studies of the chemical composition of animal and plant substances, and the transformation of specific substances in the body. One of the most important and attractive fields of inquiry since 1881 has been that relating to the chemical complexes which are indispensable in the diet. In that year Lunin[16] first attempted to nourish young animals on a diet composed of purified protein, carbohydrate, fats and a salt mixture, and observed that they immediately began to fail nutritionally. He drew the conclusion that there exist certain unidentified nutrients. Later attempts to discover the nature and number of these unidentified nutrients have revealed the existence of a number of substances, indispensable for normal nutrition, which have been collectively called vitamins. The extraordinary fact common to all of them is the exceedingly small quantities in which they are required.

The method of study of these substances is based upon simplification of the diet as far as possible by employing a mixture of adequate proteins, carbohydrates and fats, together with an adequate salt mixture, and supplementing this inadequate mixture with small amounts of individual natural foods, or extracts of these, and observing the behavior of experimental animals as respects growth, fertility and longevity, and when failure of nutrition supervenes, the symptoms which they exhibit. In this way each of the deficiency syndromes has been discovered. Further efforts are then made to concentrate or separate in pure form the nutrient principle which was lacking in the diet. In several cases it has been possible to isolate the vitamin, a deficiency of which caused the symptoms.

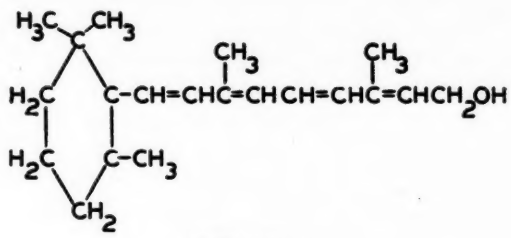
A deficiency disease, of whatever nature, causes distinctive functional disturbances, which have their origin in morphologic changes in certain tissues which are regarded as primary effects. Various non-specific and secondary effects necessarily follow. The biochemist discovers the existence and the chemical nature of the vitamin and describes its effects on the animal. The pathologist then makes his contribution in describing the morphologic changes in the tissues. The clinician is then in a position to interpret provisionally the etiology of the deficiency disease in the human patient, and

†Professor E. V. McCollum was graduated from the University of Kansas, A.B., 1903, A.M., 1904, Yale University, Ph.D., 1906. He received the honorary degree Sc.D. from the University of Cincinnati, 1921. He was instructor, assistant professor and professor, University of Wisconsin, 1907-1917. He has been professor of biochemistry at the School of Hygiene and Public Health of the Johns Hopkins University from 1917 to the present time. He discovered vitamin A, 1913; vitamin D, 1922. He was the first to formulate an adequate working hypothesis as to what constitutes an adequate diet, 1915. Dr. McCollum produced experimental rickets with explanation of the cause, 1920, and described the "line test" for assay of foodstuffs for vitamin D.

to confirm his diagnosis by therapeutic trials of products shown by the experimenter to cause remission of the disease in his animals.

Vitamins A, D and E are soluble in fats and are associated with lipid extracts of natural products. Vitamins B-1, C (ascorbic acid), riboflavin and the antipellagra factor or factors, and certain others which I shall discuss, are soluble in water. There is at least one fat-soluble factor not listed above, and several water-soluble factors, known to be indispensable for the rat or the chick, which are not, apparently, essential for man.

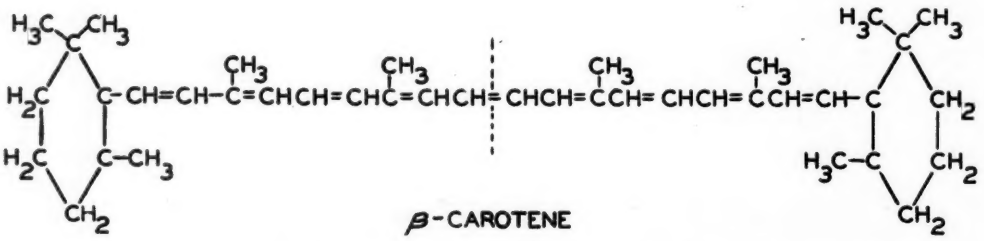
Vitamin A.—Vitamin A does not occur in the plant world, but its precurser, carotene, is widely distributed. It has been obtained from fish liver oils by distillation of a concentrate in high vacuum. It is a slightly yellow viscuous oil. Its chemical nature was discovered through a knowledge of the molecular structure of carotene. Carotene is one of the yellow pigments found in yellow and green plants, and was so named because it was first isolated from carrots. It occurs in three forms, α-, β-, and γ-carotene. β-carotene has double the vitamin value of the other forms. Half a century of study by organic chemists of the degradation products. chemical reactions with specific reagents, and synthesis, of the class of compounds known as terpenes, of which turpentine and camphor are examples, prepared them for the immediate solution of the molecular architecture of carotene as soon as the biochemists had shown its importance as a precursor of vitamin A. Carotene has the following structure:



VITAMIN A

The structure of carotene was determined by a study of its unsaturation and its oxidation products with several oxidizing agents, which yield somewhat different simple fragments of the molecule. Carotene has been shown by feeding experiments and by injection, to serve as a source of vitamin A. Vitamin A has been obtained by Holmes and Corbet[10] by distillation of a concentrate of fish liver oil, and freezing it in solution. They obtained crystals which melt at 5.5-6 C. to a yellow viscuous oil. Its chemical properties and molecular weight agree with the vitamin formula given above. Fuson and Christ[7] report the synthesis of a substance having the structure of the vitamin but no biological tests have been reported. The pure vitamin, according to Holmes and Corbet, has a potency of 100,000 International Units per cubic centimeter.

Pathologists are agreed that the primary effect of vitamin A deficiency is on epithelial cells. The cells atrophy and become stratified, keratinized epithelium, identical irrespective of their source, and are continually produced from proliferation of basal cells. Similar observations have been made on several species of mammals and on birds.



β-CAROTENE

β-carotene is cleaved in the liver as indicated by the dotted line, and, by the addition of two molecules of water, is converted into two molecules of vitamin A.

The striking pathologic condition of vitamin A deficiency is the result of accumulation of keratinized epithelial cells in glands and their ducts, and in many organs. Wolbach[31] has discussed the subject in detail. In the lungs cyst formation and bronchial occlusion, with consequent bronchiectasis and atelectasis, have been observed in man and animals. In organs cysts are formed which are filled with a yellow cheesy mass of desquamated keratinized cells. In ducts, bronchi and trachea these masses afford a cultural medium for bacterial growth, but Wolbach states that he has rarely observed invasion of the tissues, which would seem to indicate that the keratinized layer of epithelium constitutes an effective barrier. However, Higgins,[9] who has extended our knowledge of the production and solution

of urinary calculi, which occur in at least fifty per cent of experimental animals deficient in vitamin A, points out that the sequence of events is keratinization of the epithelium of the genito-urinary tract, urinary infection, and alkalinuria due to ammonia formation. In experimental A-deficient rats he found in 42 per cent coexistent renal infection. The calculi form through precipitation of calcium phospate from alkaline urine, probably facilitated by the presence of desquamated cells. On administration of vitamin A, the epithelial cells return to their normal form and function, the infection clears up, and the urine becomes acid. The maintenance of an acid urine causes gradual solution of the phosphatic calculi. O'Conner[21] has pointed out the frequent occurrence of calcium carbonate calculi in patients maintained on an alkaline diet in the treatment of ulcer, and states that the provision of abundant vitamin A is generally effective in preventing recurrence of these stones.

During the last few years several clinical investigations have been published on the skin lesions which, according to some observers, are the earliest evidence of vitamin A deficiency. Frazier and Hu[5] first pointed out that in this deficiency keratotic papules of varying size appear, distributed especially over the thighs, arms and shoulders, which arise from the pilosebaceous follicles. Microscopically, the ducts are distended, and the openings are plugged with desquamated cornified epithelium. Hyperplasia of the epidermis and atrophy of the glands characterize the skin. The eruption is said to be rare in children, but rather common in adults, and when fully developed probably represents late or severe deficiency. Youmans[53] has recently discussed the clinical aspects of this syndrome.

Particular interest now centers upon the effect of vitamin A deficiency in its relation to impairment of vision. Fridericia[6] first noted that in vitamin A deficiency, the visual purple of the retina is not regenerated after it has been bleached by light. Wald[28] has shown that light adapted retinas contain 0.2 to 0.3 gamma of vitamin A, while dark adapted ones yield only a trace. Visual purple in dark adapted retinas is destroyed by light with the production of an undescribed carotenoid pigment which he calls retinene, which is identical with visual yellow, and with a quantitative production of vitamin A. He believes that the visual purple system is a cycle, vitamin A combining with some substance, probably protein, to form visual purple, which is then broken down by light to the carotenoid retinene. This pigment may be reformed into visual purple, or further transformed to vitamin A, which may then recombine with protein to regenerate visual purple. Some of the vitamin A must be lost, since the formation of visual purple is dependent upon the presence of the vitamin in the diet.

Xerophthalmia and night-blindness are believed not to measure the incidence of milder grades of vitamin A deficiency. Jeans and Zentmire[12] have reported a series of forty-five cases of mild hemeralopia in 213 children, and in later studies they found 26 to 75 per cent of children in different social groups with evidence of vitamin A deficiency. In general, their patients responded well to the administration of vitamin A. There is still some controversy concerning the adequacy of their technic for measuring dark adaptation of the eyes, and further studies will be awaited with interest. Blackfan[1] states that the examination of a smear made from light scrapings from the bulbar conjunctiva, after staining, with observation of cornified cells, constitutes a simple test for early deficiency of the vitamin. Sweet and K'ang[25] assert that this, or examination of nasal scrapings, is the most reliable test for early deficiency of vitamin A. Asthenopia, poor vision, photophobia, Bitot's spots, and dryness and granular appearance of the bulbar conjunctivæ when the lids are held open for a few minutes, are early manifestations of this deficiency, and should cause the physician to make further inquiry.

Vitamin B-1.—It is well known that severe deprivation of this vitamin causes beri-beri, which constitutes one of the major health problems among rice eating peoples. At present there is no way to discover the extent to which sub-clinical deficiency, or clinical manifestations of deficiency more mild than are essential to cause beri-beri, occur. Anorexia, weakness, vague pains, indigestion and hypotonicity of the bowel have been suggested as manifestation of

deficiency of B-1, but the only criterion for this view is the favorable reaction of patients to yeast, or vitamin concentrate therapy. The complexity of the water-soluble vitamin group makes it impossible to decide whether B-1 or a multiple deficiency may be involved in these cases, although the presumption is strong that this is the specific factor involved.

Strauss[24] has recently reported studies which show that dietary deficiency diseases, particularly pernicious anemia, and related macrocytic and idiopathic hypochromic anemias, pellagra and "alcoholic" pregnancy, and other forms of polyneuritis in the temperate regions, are more frequently caused by conditioning gastro-intestinal disturbances which interfere with the digestion and absorption of nutrients than by inadequate composition of the diet. Persistent vomiting, diarrhea or dysentery, may result in profound malnutrition, which responds to dietotherapy.

The difficulty in determining the existence of moderate grades of B-1 deficiency lies in the lack of a specific and delicate method of determining this vitamin. Prebluda and McCollum[22] have recently announced the discovery of a test of great delicacy which, it is hoped, may make possible studies of the content of vitamin B-1 in biologic products comparable with those recently made on ascorbic acid.

Pending the development of a method of precision for estimating very small amounts of vitamin B-1 in biologic products, we can only surmise in what clinical conditions a deficiency of this substance plays a rôle where symptoms other than polyneuritis are observed. There is abundant evidence that in B-1 deficiency the most conspicuous lesion is degeneration of the myelin sheaths of the peripheral nerves. Wolbach believes that it is less certain that degenerative changes occur in the ganglion cells of the brain, cerebellum, spinal cord and dorsal root ganglions. It seems to be fully established, however, that in this deficiency there is an accumulation of lactic acid in the brain of the pigeon. O'Brien and Peters[20] found that respiration *in vitro* of brain tissues of rats deprived of B-1 was increased by addition of the vitamin, whereas such addition to the brain of normal animals caused only negligible effects. Addition of the vitamin in these experiments reduced the formation of abnormal amounts of pyruvic acid in the brain tissue of deprived rats. Thompson and Johnson[26] have confirmed these results.

The so-called B-complex, in so far as human nutrition is concerned, consists of vitamin B-1, riboflavin, and one or more factors concerned in the etiology of pellagra. In most of the clinical observations where B-1 deficiency was suspected and dietotherapy was instituted, yeast or a yeast concentrate was administered, so that all "B-factors" were given. Among the more interesting reports of response to B-complex therapy are the following:

Widenbauer[29] suspected B-1 deficiency in chorea mollis, and found yeast therapy effective after other measures had failed. He cites evidence that suggests relations between chorea minor, spasmophilia, funicular myelitis, and B-avitaminosis. Minot[19] has reported cases of diabetes associated with peripheral neuritis and achylia gastrica, which responded to yeast therapy, and raised the question whether achylia gastrica may not interfere with the utilization of both the anti-beri-beri and anti-pellagra vitamins. Many cases are recorded of the appearance of avitaminosis B associated with voluntary restriction of the diet as a result of digestive disturbances, or restriction for therapeutic measures, as in diabetes, et cetera. Cowgill and Gilman[3] observed depression of acid secretion by the stomach in animals restricted to deficient diets. Cowgill was the first to report that in animals anorexia is the first symptom of vitamin B deficiency.

Elsom[4] studied a patient who voluntarily restricted the diet, whose symptoms resembled those of pernicious anemia. There was marked pallor, glossitis, and signs of posteriolateral sclerosis. The typical signs of pernicious anemia, achlorhydria and anemia, were lacking. There was edema and low blood proteins. Administration of a liver preparation adequate to produce remission of pernicious anemia caused only slight improvement of the glossitis. On administration of a concentrate of "B-complex" there was rapid improvement in respect to fatigue, anorexia, dyspepsia, paresthesis, edema, glossitis, scaling of the forearms and brittleness of the nails. Improvement began in two weeks, and was complete in six. The pitting edema disappeared with simultaneous rise in blood protein, although

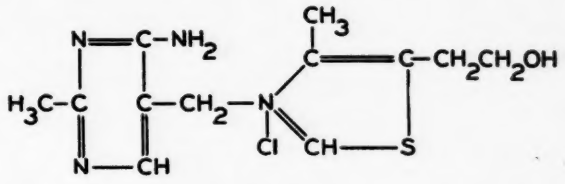
there was no increase in the protein content of the diet. Elsom's case is interesting as a confirmation of the work of Strauss, and because it suggests a cause for edema not found in the usual etiologies of cardiac and renal disease. In this case doubtless multiple deficiency existed, but there is reason to believe that the anorexia, dyspepsia, posteriolateral sclerosis and glossitis were caused by B-1 deficiency, the remaining symptoms probably arising from inadequate food intake and specific starvation for other water-soluble vitamins.

Middleton[18] has reviewed the literature relating to clinical studies of the atrophic tongue, which is seen in pernicious anemia, achlorhydric anemia, anemia of pregnancy, pellagra, sprue, Plummer-Vinson syndrone, malnutrition attended by dysentery and anemia, intestinal stricture, pyloroplasty complicated by peritonitis, Dibothriocephalusm latus, and achlorhydria. Hutter, Middleton and Steenbock[11] observed smooth, bald tongues in rats restricted to a diet deficient in the B-complex.

Cowgill[2] formulated a method for appraising the vitamin B requirement of the dog, rat, pigeon and man, which is based upon body weight, total metabolism (calories), and maximum normal weight for the species. He estimated the vitamin B content (the present B-1) of many human dietaries, and correlated the results with health conditions and clinical observations, and concluded that vitamin B deficiency is widespread in regions where beri-beri is rare, and to an extent which might be expected to impair health. One may reasonably suspect that certain gastro-intestinal disorders, heart disorders, neurological conditions, marasmus, anemias, and perhaps hyperthyroidism, may be caused by deficiency of one or more of the vitamins of the B-complex, or secondary manifestations of restricted intake or utilization of nutrients, secondary to such deficiency.

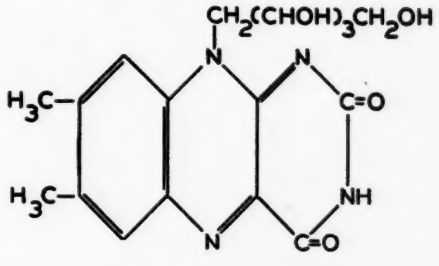
I have included these references to the clinical literature relating to so-called B-deficiency, because they suggest the importance of further inquiry by clinicians of the etiology of several disorders which has been obscure. The response to yeast administration or to concentrates which supply the same vitamins as does yeast, suggests the study of these conditions by the provision of crystalline B-1, which is now available in abundance and at low cost. There seems to be convincing evidence that B-1 deficiency is sufficiently common to be very important to the physician. By testing the value of the synthetic vitamin in several conditions in comparison with yeast, he can determine the significance of B-1 and of the remaining water-soluble vitamins as a health problem.

Vitamin B-1 is now synthesized in large quantities. Its structural formula is shown by the following:



VITAMIN B-1

Riboflavin.—Kuhn[15] discovered that the greenish yellow pigment of whey (lactoflavin) is an indispensable nutrient for the rat. Believing that he had isolated the antipellagra vitamin he called it B_2, in accordance with the British nomenclature. Further study made it clear that this flavin does not prevent or cure the so-called rat pellagra, and that the substance had been misnamed. Lactoflavin has been synthesized, and its molecular configuration is shown by the following formula:



RIBOFLAVIN

Flavins have been synthesized which have, respectively, each of several sugar groups replacing the d-ribose, but it is clear that the ribityl derivative is the one of biologic importance.[13] Flavins closely resembling, if not identical with lactoflavin, have been isolated from liver, kidney, and egg white, and have been called respectively hepatoflavin, renaflavin and ovoflavin. From numerous nutrition studies with natural foods as the sole source of water-soluble

vitamins, it seems evident that riboflavin is widely distributed in animal and plant products. We know nothing about the pathology of riboflavin deficiency, other than that rats cannot survive and grow without it. It has been shown not to benefit pellagrins.

Vitamin C.—This substance is now generally called ascorbic acid, but in the pharmaceutical trade cevitamic acid. It has been synthesized by several procedures, and is available in abundance at moderate cost.

The relation of ascorbic acid deficiency to scurvy is too well known to require discussion. Of greater interest to the clinician is the problem of subclinical scurvy with all its implications as a public health problem. Search for methods which will detect the earliest manifestations of ascorbic acid deficiency before clinical signs become evident have revealed that blood and urine analysis by chemical methods, and the determination of the resistance of the capillaries to pressure, may yield valuable criteria. Ascorbic acid may be determined by a titration method with very great precision. Adults, taking fairly satisfactory diets, carry 1.000 to 2.300 mg. per 100 cubic centimeters of blood. Children subsisting on poor diets have shown values ranging from 0.687 to 0.917 mg. Patients showing symptoms compatible with mild ascorbic acid deficiency had 0.254 to 1.09 mg. of ascorbic acid per 100 cm. of blood. Provision of a diet rich in the vitamin has raised the content in the blood to 4.31 mg. The response of the blood content of ascorbic acid to administration is rapid, but falls off, with depletion of the body's reserves, within a few days when it is not provided by the diet. The minimum content of the vitamin in the blood compatible with health has not been finally established.

Yavorsky and King[32] found the tissues of human subjects to vary from over three times the "average" value to less than one-tenth of it. They estimate that 20 per cent of subjects examined *post mortem* (in America) were in a state of latent scurvy. The minimum daily amount of ascorbic acid intake which is required to prevent the slightest objectively ascertainable prescorbutic alterations has been estimated to be about 27-30 mg. per day for the normal adult. Göthlin[8] believes, on the basis of studies on the capillary strength in children, that the child requires twice as much as the adult.

The test of capillary resistance is made by constricting the arm above the elbow, and counting the number of petechial points in one square inch of skin on the inner surface of the upper fore-arm. The results of different investigators on groups of children have shown considerable variation in individuals, and with the seasons. It seems certain that, notwithstanding marked individual differences in capillary strength due to causes other than the state of nutrition, there is a marked tendency to seasonal variation, the capillaries showing greatest strength during the season when fresh fruits and vegetables are available, and lowest strength in late winter and spring.

Studies on urinary excretion of ascorbic acid show that very little is excreted by the adult until the intake exceeds about forty milligrams per day. The excess over this amount is excreted by the kidneys. An interesting observation shows that active cases of tuberculosis require an intake of ascorbic acid much higher than do arrested cases to induce excretion of the vitamin. The arrested case behaves like the normal individual, whereas fifty to eighty, or even two hundred, milligrams intake is necessary in different individuals with active tuberculosis before an appreciable output in the urine is observed. There appear to be no data for fever patients other than those with active tuberculosis. It appears that in this disease, and perhaps in all fever patients, the requirements for ascorbic acid are very high.

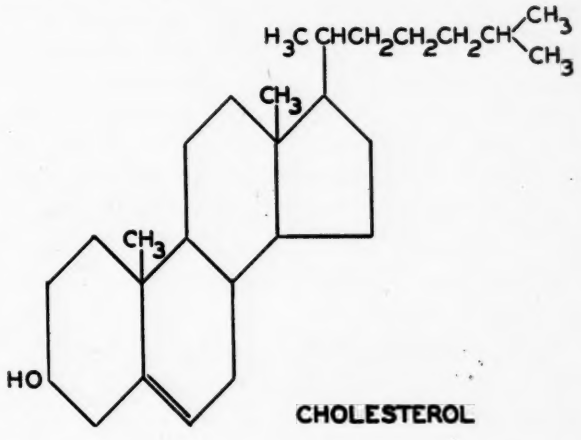
King and Menten[14] have shown that guinea-pigs maintained on diets deficient in ascorbic acid, and injected with sublethal amounts of diphtheria toxin, showed diffuse hyperplastic arteriosclerosis in the lungs, liver, spleen and kidneys. No vascular thickening was observed in the heart. Their animals developed hydrophic degeneration of the islets of Langerhans, and an associated hyperglycemia and lowered glucose tolerance. With recovery of the animal the pancreatic lesions disappeared. Doses of several bacterial poisons in sublethal amounts (0.1, 0.3, 0.5 and 1.0 M.L.D.) were given to animals under controlled conditions and receiving ascorbic acid at abundant, protective and sub-protective levels. When the guinea-pigs were partially depleted, of their ascorbic acid reserves

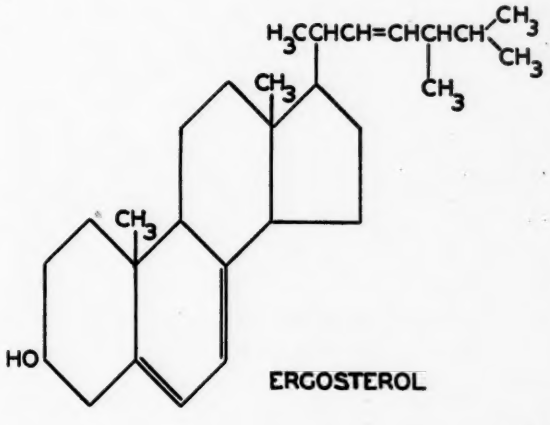
without showing any external signs of scurvy, the survival time was shortened about 50 per cent and the loss of weight was more severe. Hemorrhage and necrosis at the site of toxin injections were more marked in the latent scurvy condition. There was a decrease in oxygen consumption capacity of liver and kidney tissue of 5 to 15 per cent after toxin injection. They conclude that there is a wide zone of ascorbic acid deficiency, without the appearance of scurvy, where physiological processes are subnormal and the animal is more sensitive to injury from bacterial toxins.

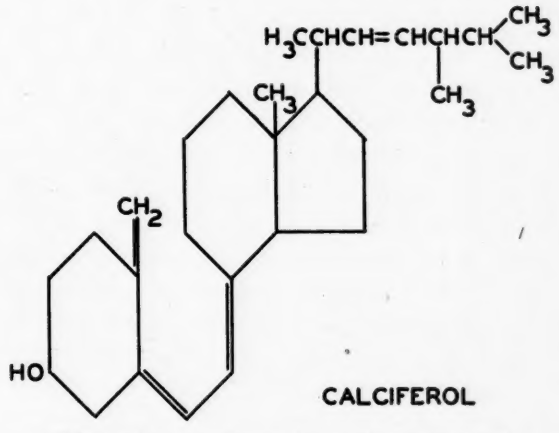
McConkey and Smith[17] fed tuberculous sputum to animals suffering from ascorbic acide deficiency and to animals on a normal diet. Ulcerative intestinal lesions of tuberculosis developed in the deficient animals but not in the controls. Reinhart, by combining chronic scurvy with super-imposed infection, produced a picture which had striking similarities to rheumatic fever and rheumatoid arthritis, and suggested that the sub-clinical state may constitute the "rheumatic tendency." The fact that administration of ascorbic acid to patients suffering from rheumatic fever has not proven effective as a therapeutic measure, in no way speaks against the view of Reinhart.

There seems to be very convincing evidence, therefore, that the maintenance of a high ascorbic acid reserve in the tissues affords not only a condition best suited for the maintenance of normal physiological processes, but likewise affords protection against pathological processes in certain tissues, occurring independently of disease-producing agencies, and also affords protection against tissue injury by bacterial poisons. These facts, together with the sensitivity of the odontoblastic membrane to deficiency of ascorbic acid, which influence adversely the structure of the developing tooth, and in the mature tooth its nutrition, place nutrition, in relation to the prescorbutic condition, clearly among the more important aspects of preventive medicine.

Vitamin D.—Vitamin D was discovered in its rôle as an antirachitic agent. The most striking effect of a deficiency of this nutrient is a fall in the content of inorganic phosphate ions in the blood. Such deficiency also exerts an extraordinary influence upon the behavior of the cartilage cells in the region of growth in the developing bone. Normally, there is continuous transformation of resting cartilage into the vesicular form on the diaphysial side of the disc, and, after the formation of columns of cells of (in the rat) four to six units, a degeneration of these cells nearest the diaphysis, which keeps pace with proliferation. In vitamin D deficiency the degeneration of cells does not occur at the normal rate, and there is an accumulation of an abnormally large volume of vesicular cartilage together with excessive amounts of osteoid tissue. The severity of rickets may be gaged by these criteria.







Molecular configuration of cholesterol.

Vitamin D occurs abundantly in certain fish liver oils. Cod liver oil of U.S.P. grade contains 85 International Units of vitamin D and 600 units of vitamin A per gram. The International Unit of vitamin D is an arbitrary one. Halibut liver oil contains 75 to 125 times as much D as cod liver oil, bluefin tuna liver oil contains 40,000 I.U. per gram, and percomorph liver oils greatly exceed this value. The chemical nature of vitamin D in fish liver oils has not been determined, but they are closely similar to calciferol, which is crystalline vitamin D prepared from ergosterol by irradiation. Ergosterol is a sterol which occurs in relative abundance in fungi such as ergot and yeast. It is easily extractable by certain fat solvents, and is obtained in crystalline form. When irradiated with ultraviolet light it passes through a series of transformations, the most important of which is the product calciferol, likewise crystalline. Cholesterol, the principal sterol found in the animal body, has the molecular configuration shown on the preceding page.

The only method available for determining the vitamin D content of an oil is based upon observing the size of the dose necessary for the deposition of calcium salts in the region of growth in the bones of growing animals in the rachitic state. It has been found that if a sample of cod liver oil and one of calciferol are assayed with young rats and then with rachitic chicks, about 100 times as many rat units of calciferol as compared with rat units of the vitamin of cod liver oil are necessary to produce comparable calcification in the chick. This remarkable difference in the reaction of the rat and the bird affords a means of differentiating certain of the different forms of vitamin D. Rat unit for rat unit, the vitamin of bluefin tuna liver oil is only about one-seventh as potent for the chick as for the rat. Several careful investigations with human infants have demonstrated that the latter reacts almost equally well to the vitamin of cod liver oil and to calciferol. Calciferol dissolved in some vegetable oil is known in the pharmaceutical trade as viosterol. The therapeutic dose of either of these forms of the vitamin is 1000-1500 I.U. per day. The usual prophylactic dose recommended is about 400 units.

Studies of different derivatives of cholesterol and calciferol have shown the existence of at least six forms of vitamin D other than the two forms known to occur in nature in fish liver oils (*e.g.,* cod liver and bluefin tuna liver oils). The potency of these different forms differs greatly. The two most important forms are the one in cod liver, halibut liver, percomorph liver oils, et cetera, and calciferol.

Calciferol may be prepared from ergosterol by irradiation with ultraviolet light and also by subjecting the molecules of ergosterol to impingement by a stream of low velocity electrons. Both processes are protected by patent. The final product is believed to be identical in these two methods of preparation.

There is present in the skin a sterol of undetermined nature which, when acted upon by ultraviolet rays, either from sunlight or artificial sources, is converted into a form having antirachitic properties, hence sunlight containing such rays can prevent or cure rickets. In temperate regions, especially in cities where smoke screens cut the active rays of light, and where infants and children wear heavy clothing and remain indoors most of the time during the colder months, sunlight is not effective, and vitamin D should be provided during the winter months. Any of the fish liver oils sold for this purpose are satisfactory. A number of irradiated foods have been offered to the public as sources of the vitamin. Medical opinion now favors vitaminization of milk either by irradiation, which can result in a product containing not more than 135 I.U. per quart, or by the fortification of milk with a fish liver oil concentrate. Calciferol appears not to have been used to vitaminize milk up to the present time, although it would be satisfactory for this purpose. Liver oil concentrates are usually added to give the milk the potency of 300-400 units per quart. A third method of vitaminizing milk is to feed irradiated yeast to the cow. Vitamin D is absorbed and secreted in the milk. This method has been confined almost exclusively to certified milk production.

May Mellanby first demonstrated the importance of an adequate supply of vitamin D for the development of teeth with normal structure of enamel and dentine. She also showed by extensive studies on institutional children that the regular provision of vitamin D reduces the susceptibility of the

teeth to decay. Several investigators have confirmed her findings. Since the normal behavior of cartilage and a normal content of phosphate in the body fluids are essential for the calcification of enamel and dentine, and both depend upon an adequate supply of vitamin D, the soundness of this view is apparent. The presence of pits and fissures in teeth, forming potential food traps, predisposes the teeth to caries. Since the ameloblasts are of epithelial origin, the significance of vitamin A, so necessary to prevent keratinization of this type of cell, is also apparent for the formation of normal enamel.

Richardson[23] reported a study of the effect of viosterol during pregnancy on the duration of labor in primipara which should be extended by other clinicians. Two hundred and one of three hundred consecutive cases were given viosterol during pregnancy. The combined duration of labor of 132 primiparous patients who received viosterol totaled 792 hours, or an average of six hours per patient, which, he states, is one-third the length of the normal first labor. The combined duration of labor in 63 primiparous patients who were not given the vitamin totaled 1,197 hours, an individual average of 19 hours. There were 105 multiparous patients, some of whom received viosterol. He did not compare those given the vitamin with those not receiving it, but states that the average duration of labor for all the multiparous women was 3.5 hours, which is lower than the average time. He also states his belief that loss of blood at parturition was less in the viosterol treated women which he attributed to increased coagulating power of the blood and more adequate clamping off of the vessels as a result of improved muscle tone.

Wilder and Howell[30] point out that the majority of human cases of parathyroid enlargement occur in the northern part of the United States, where there is a deficiency of sunshine. Several investigators have described extraordinary enlargement of the parathyroids in chickens deprived of vitamin D. This problem should be further investigated, as should also the possible relation of mastitis to vitamin D deficiency. This condition seems to be rare in the south, both in humans and in cows, whereas it occurs frequently in the northern states.

The Antipellagra Factor.—There is unanimity of opinion among investigators that pellagra is due to some dietary deficiency, which has been called vitamin B_2, P-P factor, and vitamin G. For some years it was generally believed that a form of dermatitis in the rat which is caused by inadequate diet was the analog of human pellagra. This is now known to be a mistaken view. Maize, which has generally been abundant in the diet of the human pellagrin, prevents or cures the rat dermatitis. The factor necessary for the prevention of the rat dermatosis is now called vitamin B_6. The nature of the substance or substances, a deficiency of which causes human pellagra, is entirely unknown. The administration of liver, yeast, or wheat germ, produces cures, the former, often dramatic changes in the patient. Some studies with liver fractions seem to indicate that pellagra is due to double deficiency of unknown substances. The experimental status of our knowledge in this field does not warrant further discussion here.

Vitamin E.—The most striking function of vitamin E is in the prevention of death and resorption of embryos in the rat, which invariably occur in its absence. The ordinary sex cycle in the rat is in no way interfered with when the vitamin is deficient in the tissues. In the male, prolonged deprivation of vitamin E results in sterility. Concentrates of the vitamin have been prepared from lipoid extracts, especially from wheat germs, which were effective in rat tests in doses of 0.1 mg. daily. Lettuce is a good source of it. It has not been obtained in pure form.

Vogt-Moller[27] has investigated the treatment of sterility and habitual abortion in human subjects by means of wheat germ or wheat germ oil. He controlled his experiments by applying treatment only to those cases where examination of the man and the woman showed apparently normal conditions. In twenty-three cases of habitual abortion which were treated, the birth of a living child was obtained in seventeen. Further studies in this field are highly desirable.

Other Vitamins. — The existence of more than twenty water-soluble vitamins has been suggested by as many investigators, but most of the experiments on which such suggestions were made antedate the

discovery of the importance of riboflavin and of the rat antidermatosis factor B_6. So far as one can determine from our present knowledge, it appears that the human requirements for water-soluble vitamins are limited to B_1, C, riboflavin, and one or more antipellagra factors. The chick antidermatosis factor is demonstrated to be different from the rat antidermatosis factor, and it has not been determined whether the anti-blacktongue factor essential for normal nutrition in the dog, corresponds with one of these rat or chick factors.

There is a disease of chicks described by Elvehjem in which crater-like ulcers in the lining of the gizzard are characteristic. Pork lung was found to be the most effective of several foods for the prevention or cure of this disease, but the active substance could not be readily extracted by any solvents tried.

There is a so-called hemorrhagic disease of poultry, characterized by hemorrhage similar to those seen in scurvy, but ascorbic acid does not prevent the disease. Green feeds effect a prompt cure. The nature of the nutrient a deficiency of which causes this disease is unknown.

There is also a disease of poultry called nutritional encephalomalacia which has been described by several workers. It appears to be caused by deficiency of a fat-soluble substance, since Pappenheimer and Goetsch have effected a 20-fold concentration of it by making an alcohol-soluble fraction of soy bean oil.

When we consider that animals may fail nutritionally because of deficiency of any one of nine to fourteen amino acids (five have not been thoroughly studied), or deficiency of any one of at least twelve inorganic elements essential in nutrition, as well as from vitamin deficiency, it is remarkable that so many advances in our knowledge of the components of the normal diet have been made within forty years. Experimenters are now in a very favorable position to extend their discoveries more rapidly than at any time in the past. We may confidently look forward to a complete solution of the problem concerning the nutritive requirements of different species of animals within a few years.

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II. The Mineral Elements

When one examines spectrographically the ash from the body of an animal it is found to contain small quantities of many inorganic elements. Those which have been reported present in animal and plant tissues should be distinguished in two groups, viz.: those which are known to play physiological rôles, and are indispensible in the diet; and those whose significance to the organism have not been proven. The first group includes sodium, potassium, calcium, magnesium, chlorine, iodine, phosphorus, sulfur, iron, manganese, copper and zinc and apparently cobalt. If any one of these elements is omitted from an otherwise adequate diet, failure of nutrition will supervene. Although our knowledge of the symptomatology of uncomplicated inorganic element deficiency diseases is still incomplete, it is clear that in such states the mode of

failure of the animal is characteristic for each element. Inorganic deficiency syndromes are fully as dramatic, and fully as important, from the standpoint of human health, as are certain of the vitamin deficiencies.

The second group of inorganic elements found in the body, whose importance is open to question, includes: aluminum, antimony, arsenic, barium, bismuth, boron, bromine, cesium, chromium, fluorine, germanium, gold, lead, lithium, mercury, nickel, rubidium, selenium, silicon, silver, strontium, tin, titanium, and vanadium. It is known that boron is essential for plant growth, and it may play a physiological rôle in animal nutrition, but the decision cannot be made on the basis of existing knowledge. Only three of this list of elements, boron, bromine and vanadium, are suspected of being important in animal physiology. Since it is almost impossible to prepare a diet adequate in all respects but free from one of these elements, the experimental demonstration of their importance or unimportance, in a nutritional sense, is extremely difficult. That further studies in this field are important is supported by the fact that the necessity for normal nutrition, of copper, manganese, zinc and cobalt, has been experimentally demonstrated within ten years.

Most, if not all, of the chemical reactions associated with the life processes are the resultants of integrated chemical transformations. In these biochemical reactions the inorganic or mineral elements play fundamental rôles. The profound significance of the ions of sodium, potassium, calcium, magnesium and phosphate, on irritability of the nervous system, and on other physiological processes is well known. I shall here attempt only to call to your attention some of the recent findings in researches in this field.

Deficiency of iron is of widespread occurrence. Until recently it was believed that the total amount of iron in a foodstuff represented available iron. It has been shown by Hill[11] that hematin iron is not available to the body. He has shown that forms of iron which are not capable of utilization by the body for hemoglobin formation, e.g., hematin iron, et cetera, may be determined by its property of not reacting with α, α-dipyridyl reagent. Iron which does react with this reagent is believed to be available in nutrition. Using this method, Elvehjem, Hart and Sherman[7] found that the iron of wheat, oats and yeast was available in nutrition to the extent of 47, 57 and 47 per cent, respectively. Since, even on the basis of an assumed iron requirement of 0.015 gm. per day for man, it was long ago appreciated that many dietaries containing a high quota of refined cereals did not provide enough of this element. The low availability of much of the iron of our common foods makes this element a special problem to the physician. Elvehjem and his co-workers, on the consideration of taste, toxicity, et cetera, select ferric pyrophosphate as a compound of iron having many fine qualities. Its iron is easily available, but it is held in such firm combination that it does not produce astringent effects, so characteristic of other iron salts. Since it is soluble in neutral solutions it may be especially useful in cases of anemia with achlorhydria. It seems probable that some modification of prevailing methods of iron administration might well be considered.

Mention has been made of the integration of the chemical reactions in living tissues. An interesting study illustrating this fact in its relation to iron utilization has recently been described by Orten, Smith and Mendel.[22] They restricted rats to a diet qualitatively complete, but supplying the essential inorganic elements at a low level. This extreme restriction of inorganic constituents of the diet produces significant alterations in the concentration of pigment and of erythrocytes in the blood. There occurs a progressive increase in the number of erythrocytes per unit volume of blood and a simultaneous decrease in the concentration of hemoglobin. The diet was deficient in calcium and was somewhat lower in its content of iron than is believed essential for normal nutrition. It was less deficient in sodium, potassium, phosphorus, magnesium and chloride. They sought to discover the nature of the specific inorganic deficiency responsible for the polycythemia, and concomitant anemia, observed in the low-salt animals, since other animals fed the same basal ration supplemented with a complete salt mixture at an appropriate level, were free from anemia. The addi-

tion of more sodium, potassium, magnesium or chloride, failed to improve the blood picture in the anemic rats. Administration of additional iron resulted in improvement of the blood in some but not all animals. They observed, however, that the provision of more calcium to the anemic rats, on the iron- and other essential mineral-deficient diet, had a markedly beneficial effect. Under the conditions of the experiment the provision of iron was not so consistently effective, as the provision of calcium, in correcting the polycythemia and concurrent anemia.

The widespread occurrence of anemia, the presence in foods of much iron not in an assimilable form, and the frequency of deficiency of calcium in the average dietary, may now be correlated in a very interesting way. It is suggested, also, that the observations of Strauss[25] that vitamin deficiency syndromes are more likely to occur in persons who suffer from alcoholism, chronic vomiting, voluntary restriction, or therapeutic restriction of the diet, diarrhea or dysentary, because of conditioning of the digestive tract such that absorption of food substance is inadequate, also suggest the etiology, and refractoriness of certain hypochromic anemias, which do not well respond to iron therapy. The clinician may well study the effectiveness of combined calcium and iron therapy.

There is evidence that iron utilization is defective when the body's reserves of ascorbic acid are depleted. That anemia occurs in scurvy is well known, but it has been attributed by some to undernutrition and hemorrhage, though increased blood destruction has been suggested as an additional factor. Mettier and others[19] state that in adults with scurvy the pronounced anemia often encountered can be promptly relieved by providing fruit, green vegetables, and fresh liver, foods rich in vitamin C. There is reticulocytosis and rapid regeneration of blood. Neither large doses of iron nor the substance potent in pernicious anemia appear to accomplish these effects.

Now Dunlop and Scarborough[6] report the treatment of a man whose income was but $4.00 per week, and who subsisted on $1.50 per week for food. He had eaten bread, syrup, margarine, corned beef or smoked sausage, cheese and tea made with sugar and canned milk. In a year and a half he had taken no fresh vegetables, potatoes, fresh milk or fruit. He had symptoms of scurvy. His iron intake was estimated to be 10. mg. daily, or about two-thirds of his requirement. He was kept on his usual diet and given 60 mg. daily of ascorbic acid. Blood corpuscles increased during seventeen days from 2,050,000 to 4,226,000, and the hemoglobin from 45 to 77 per cent. After this he was continued on his usual diet, but no more ascorbic acid was administered, yet in eleven weeks the corpuscles increased to 5,600,000, and the hemoglobin to 100 per cent. Pain ceased in two days after giving the ascorbic acid, and improvement of health continued for ten weeks after it was stopped. Dunlop and Scarborough conclude that vitamin C deficiency may be a factor producing anemia among working people even in the absence of scurvy.

The iron requirements of man have been estimated by several investigators. Daniels and Wright[5] believe that 0.6 mg. of iron, and 0.1 mg. of copper per kg. of body weight suffice for the maintenance of normal growth of children of four to six years. Farrar and Goldhamer[8] conclude that 5 mg. of assimilable iron daily is sufficient for normal adult males. Macy and Hunscher[18] suggest that 20 mg. of assimilable iron daily are necessary for the pregnant woman.

Copper.—After the demonstration of the necessity of copper for the utilization of iron in the body, several investigators have attempted to determine the daily requirements of this element, and to inquire concerning the content of copper in various foods. The consensus of opinion is that the ratio of copper to iron should be about 1:5. Hawksley[10] has studied many cases of anemia in children to learn of their response to copper therapy. He cites the case of an infant with nutritional anemia in which iron therapy over a period of six weeks was ineffective. The addition of copper was followed by a rapid return to normal of the erythrocytes and hemoglobin. Before administration of copper, a Price-Jones curve showed the cells to be of microcytic type; after copper treatment the mean diameter of the cells became normal. In his experience about one case in twenty of nutritional anemia in infancy suffers from

copper deficiency, and all such cases show microcytosis.

The copper content of normal human blood varies from 0.185 to 0.229 mg. per 100 ml., and is of the same order in other species. This element is fairly evenly divided between plasma and corpuscles. Hawksley states that the copper content of the blood in pernicious anemia, Banti's disease, acute myelogenous leukemia, chronic lymphatic anemia, malaria, nephritis, carcinoma, tuberculosis, and polycythemia vera, was normal or above normal in all cases studied analytically. It appears from fairly numerous food analyses, that copper deficiency is not likely to occur in human nutrition, and that therapeutic administration of this element will be effective only in the exceptional case.

Manganese.—That manganese is an essential element in nutrition was shown by Orent and McCollum[20] who employed a diet the ash of which was spectrographically free from this element.

On the manganese-free diet, young rats grow to maturity in an apparently normal manner. The females, as shown by the technic of Evans and Long, involving daily examination of vaginal smears, go through normal estrual cycles. They produce approximately the normal number of young if mated at proper intervals with normal males. These females, deprived of manganese, failed in fifty-eight of fifty-nine cases to suckle their young. They appeared indifferent to them and did not give them the care or opportunity to suck which is characteristic of female rats on the same dietary formula with small amounts of manganese added.

These manganese-free females, when given foster young from our stock litters failed in eight cases out of ten to suckle them, although the vigorous young were very aggressive because of hunger. The seven young reared by the other two females were retarded, apparently from insufficient milk supply.

Female rats of our breeding stock did not show interest in and therefore did not give an opportunity for the young of manganese-free mothers to suck. But seven of 107 manganese-free young were reared by stock foster-mothers. These were undersized and of inferior appearance although the litters were small and in all likelihood secured all the milk they wanted.

Male rats raised on a manganese-free diet showed no abnormality other than testicular degeneration. This degeneration is well under way by the 100th day on the diet. The atrophy then rapidly progresses until only vestiges remain and complete sterility results. There is little or no obesity in these males.

The same manganese-free diet, after the addition of 0.005 to 0.05 per cent of manganese in the form of the chloride kept males in sexual potency for at least fourteen months. Their testes appeared normal at the end of the experiment.

Manganese is absent (spectrographic test) in the young of manganese-free mothers. It is present in new born and fifteen-day-old rats of mothers on manganese-containing diets. Manganese therefore passes through the placenta if present in the mother's blood. It is also absent from the organs of rats raised on the experimental diet.

Manganese plays no rôle in blood regeneration.

Daniels and Everson[4] employed a milk-iron-copper-manganese diet on which they reared fifth generation young with approximately 100 per cent viability. The same diet without added manganese contained (i.e., cow's milk) 0.03 mg. of manganese per liter. On the latter diet, eight first generation females produced 103 young; forty-seven in first litters, thirty-three in second, and twenty-three in third. These young were sired by stock males, since male rats on a manganese deficient diet become sterile within about 100 days. Of these 103 young, forty-one either were born dead or died within two hours; twenty-five were anesthetized for analysis, and thirty-seven were transferred to stock mothers. Sixty-nine per cent of these subsequently died within a few days; twelve were raised by two females (six each) to weaning weights of 53.7 and 41.5 gm. respectively. In marked contrast to these results, were the young of fifth generation females restricted to milk-iron-copper-manganese. One hundred per cent of these were reared with an average weaning weight at twenty-eight days of 69.2 grams, a weight corresponding to young of the breeding stock.

Mother rats on the manganese-deficient diet, which had lost their young at birth,

were able to suckle 96.9 per cent of foster young from the stock colony, to average weaning weights of 58.7 gm. From these observations and those of Orent and McCollum, it is evident that fertility persists in female rats restricted to a diet so low in manganese that the young are not normally nourished *in utero*, and are debilitated at birth. The diet of Orent and McCollum was much lower in manganese than that of Daniels and Everson, which may account for the lower capacity of their rats to suckle stock young. Kemmerer and others[12] observed estrual disturbances in manganese-depleted mice, whereas Orent and McCollum[21] found that rats on their almost manganese-free diet, capable of inducing sterility in male rats in about 100 days, continued to have normal estrual rhythm as shown by vaginal smears.

There appears to be no evidence that manganese deficiency occurs in man, but it is quite possible that it may do so. Manganese deficiency, severe enough to cause serious malnutrition, is common in young chickens, as has been shown at the Cornell University Experiment Station.

In an investigation of the cause and prevention of so-called perosis, an anatomical deformity of the tibial metatarsal joint of young chickens, Wilgus and co-workers[26] found "that the common C. P. grade of calcium carbonate, hydroxide and chloride as well as of mono-, di- and tri-calcium phosphates and of mono-sodium phosphate aggravated the occurrence of this disorder to about the same extent as steamed bone meal.

"On the other hand, a technical grade of mono-calcium phosphate actually possessed a preventive rather than a causative effect. A spectroscopic examination of this salt showed the presence of considerable manganese and traces of iron. A qualitative analysis indicated the presence of aluminum as well. The subsequent addition of an equivalent amount of manganese, 0.0025 per cent, to a basal diet containing 0.0010 per cent demonstrated that this element was responsible for the preventive action of this salt. This amount of manganese was found to be quite effective in preventing perosis at levels of 1.0 and 1.2 per cent of calcium and at levels of 0.8 and 1.2 per cent of phosphorus. The addition of a mixture containing 0.0025 per cent each of manganese, aluminum and iron was entirely preventive at the lower calcium and phosphorus levels and had a slight beneficial effect on growth. Further results showed that aluminum and zinc had a similar but less effective preventive action. The perosis preventing property of common feed stuffs was roughly in proportion to their manganese content.

"It is concluded that perosis is due to the lack of certain inorganic elements, of which manganese is notable, and that its occurrence is aggravated by an excess of calcium and probably of phosphorus."

Cobalt in Nutrition.—Bertrand and Machebœuf[2] determined the quantity of cobalt in various human tissues. Expressed as milligrams per kilogram of fresh tissue, the cobalt content was: Fat less than 0.010, muscle 0.025, stomach 0.030, brain 0.040, uterus 0.080, liver 0.250, kidney 0.250, pancreas 0.350, spleen 0.470. Cow milk contained 0.015 mg. of cobalt per kilogram. Bertrand[1] noted the presence of considerable amounts of cobalt in insulin preparations. Simultaneous injection of small quantities of cobalt and insulin into rabbits or dogs markedly increased the action of insulin on the blood sugar.

Orten and co-workers,[23] in 1932, showed that administration of cobalt to rats restricted to a milk-iron-copper diet, caused marked polycythemia. This observation has been confirmed by others. Lines[14] reports that a condition in sheep, known as "Coast disease" in South Australia, characterized by anemia, loss of weight and appetite is relieved by the administration of minute amounts of cobalt nitrate. Stare and Elvehjem[24] have reared rats on a milk-iron-copper and manganese diet and found that the entire body contained less than 0.01 mg. of cobalt. They state that the presence of 0.04 to 0.05 mg. of cobalt in the entire body of a rat was sufficient to produce marked polycythemia. Such evidence as we possess seems to indicate that cobalt is an essential element, and that extremely small amounts of it suffice for normal nutrition. The evidence is conflicting. Fisher and Scott[9] were unable to detect cobalt in the pancreas of cattle of any age, and Blumberg and Rask[3] could not detect cobalt in milk by the spectrograph.

Iodine in Nutrition.—The continuing interest of investigators in the rôle of iodine

in relation to health is indicated by the fact that in the years 1931 to 1936, inclusive, 387 titles are listed in an abstract journal under this element as the key word. These contributions, while affording much interesting and useful information, contribute little that is novel, or fresh as to viewpoint. A study by Lang[13] is of particular interest. He states that goiter did not develop in rats kept in the laboratory on soils from goiterous regions. When the soil was ordinary peat, goiter of the hyperthyroid type appeared in which the goiterogenic factor is suggested to be female sex hormone, of which there were 500 mouse units per kg. of fresh peat.

McCarrison[15] found that diets with a deficiency of several vitamins were more goiterogenic, than those which lacked only one, but dietetic factors alone were not sufficient to account for the occurrence of goiter in experimental animals. Lymph adenoid goiter was produced in rats on a vitamin deficient diet even though there was an adequate ingestion of iodine, but was not observed when the diet was supplemented with yeast or cod liver oil. Goiter due to calcium excess was prevented by increasing the iodine content in proportion to the calcium excess. Surveys, he states, did not show that goiter was due entirely to an iodine deficiency. He believes that iodine deficiency is favorable to certain types of goiter, but not essential to any type. The goiterogenic action of cabbage, and other *Crucifera* is connected with the presence of cyanogen compounds, as was shown by Chesney. There are no important new researches on the significance of such foods in the etiology of goiter. It has been demonstrated, however, that keeping the reserves of ascorbic acid in the body high exerts a protective action against their influence on the thyroid gland.

The prophylactic value of iodized salt has now been tested for a sufficiently long time to make clear its value. The present status of prophylaxis against simple goiter can best be illustrated by quotations from McClendon and from McClure.

McClendon[16] reports a letter from Dr. Eggenberger giving his experience over an eleven-year period on the prophylactic use of iodized salt in Switzerland. His conclusions are:

"1. Iodine in very small quantity is a food.

"2. Of all kryptotrophic elements of the human body, iodine is the first of which we now know the necessary quantity for daily use. This is about 1 or 2 γ for every kilogram of body-weight (γ = microgram, the millionth part of a gram).

"3. If the average daily intake is under 1 γ/kg. in any part of the world, the danger of goiter in man exists.

"4. If the average intake is near 2 γ there is no danger at all of goiter, even though the susceptibility to goiter is increased by infectious disease or high fat or high cabbage diet.

"5. Experiments to show freedom from goiter without sufficient iodine-supply have often been made without chemical analysis of iodine intake.

"6. The extended natural comparative studies in Switzerland (v. Fellenberg), Holland (Reith) and U. S. A. (McClendon) and the most successful results of prophylactic measures against goiter in Appenzell prove that goiter is indeed a symptom of iodine deficient disease, what Marine, Kimball, Lenhart and others have proved long ago. Goiter can easily be avoided with iodine in the salt, in the proportion of 1:100,000 for daily use."

McClure[17] discussed the Michigan experience in the prophylactic use of iodized salt in relation to goiter. He points out ". . . that years ago this method of prevention by the use of iodized salt was tried in both Switzerland and France and then given up, owing to the fact that Breuer, Kocher and others came to the belief that iodine might do more harm than good, and cases of iodine hyperthyroidism were described in 1900.

"In this country, in 1907, Marine and his associates reported that iodine is necessary for the normal function of the thyroid. This work stimulated a trial of iodized salt in this country. McClendon is responsible for considerable knowledge of the distribution of food iodine with special reference to goiter. He, too, has charted the iodine supply in different parts of the states.

"In Michigan iodized salt was introduced through the grocery stores by the efforts of the Pediatric Section of the Michigan State Medical Society in 1924. The results in Detroit and Southern Michigan which we have studied are astounding, as viewed from the number of enlarged thyroids amongst the school children and also the number of patients coming to operation for the three types of goiter—colloid, adenomatous and hyperplastic. In 1924 the survey by Kimball in different parts of Michigan showed a very high incidence which has always been endemic here. In Detroit it was not as high as in other parts of the states, but even here there was an incidence of 35 per cent of enlarged thyroids in the school children. In the eleven years that have passed, this incidence has gradually decreased, until now less than 1 per cent of our school children have enlarged thyroids. After two years with the use of this salt the number of goiter operations in the seven largest hospitals in Southern Michigan began to decline, but the total of all operations performed showed but little change.

The following conclusions are reached from our studies here.

"1. Iodized salt as used in Michigan did at first apparently increase the number of thyroid operations.

"2. The increase was in the nodular goiter or adenoma group, and we believe the iodized salt may have activated a group of quiescent adenomata, producing toxic goiter symptoms.

"3. The increase reached its peak in the second year after the introduction of iodized salt.

"4. An increase in the death rate from goiter as shown by the Board of Health statistics reached its peak in the second year after the introduction of iodized salt.

"5. There was no increase in hyperthyroidism, excepting in the nodular goiter or adenomata group.

"6. The number of operations for toxic diffuse and toxic nodular goiter has rapidly and steadily decreased after the apex of the second year increase had been reached.

"7. The incidence of endemic goiter or enlarged thyroid has been reduced almost to nil since iodized salt has been so widely used.

"8. We now see no cases which show the slightest ill effects from the use of iodized salt.

"9. Toxic nodular goiter and toxic diffuse goiter are less apt to occur when there has been no previous enlargement of the thyroid (endemic goiter); at least this would seem a safe conclusion based on our experience."

Magnesium.—My associates and I have given considerable attention, during recent years, to the study of the effects of magnesium deficiency in the rat and dog. We were able to reduce the content of magnesium in an otherwise adequate diet, to 1.8 parts per million. On this diet young rats respond within twelve to fifteen days with a reduction of the magnesium content of the blood from the normal of about 2.5 mg. per 100 c.c., to less than half this value. This diminished magnesium in the blood brings about a striking chain of symptoms-vasodilation, acceleration of the heart beat, and convulsions, ending in death. The only change in the composition of the blood other than magnesium, which we have been able to detect is marked increase in the cholesterol ester level. The blood calcium remains normal. The animals are hyperirritable, and respond to much smaller electrical stimuli than do normal ones. This syndrome necessitates the expansion of the term tetany to cover what we have termed "low magnesium tetany." A few clinical investigators have reported low values for magnesium in human subjects suffering from hyperirritability. This field should invite further exploration.

In my remarks I have mentioned calcium and phosphorus metabolism only incidentally. This is because there have been no very fundamental researches in this field during the past few years. The action of the hormone of the parathyroid glands as a regulator of calcium in the blood, and the relation of vitamin D to the phosphate content of the blood, and to calcification of the osseus system, are well established, but the most fundamental researches, viz., those which reveal how these substances accomplish these effects, remain to be made.

Except for the fact that it has been shown by the Wisconsin group that zinc is an essential element for normal nutrition, nothing is known about the rôle of this element in physiologic processes, nor the pathological effects of its deficiency.

Thus far I have discussed only those mineral elements which play physiological rôles—the indispensible ones in the diet. There are two mineral elements which have come into prominence during recent years, viz.: fluorine, and selenium, which are widely distributed, and constitute health hazards. There are more than 100 localities in the United States, where the drinking water contains more than two parts of flourine per million. Some waters used for drinking contain considerably more than this. Such waters cause mottling of the teeth of children.

Selenium is known to occur in soils in South Dakota, Wyoming, Nebraska, and Kansas in amounts which create a serious problem in the rearing of farm animals, which are fed solely on home-grown produce, and may constitute a human health problem. Wheat grown on a soil containing two parts per million of selenium, contains, in the grain, as much as twenty-five parts per million. Smith and co-workers have recently reported a study of 111 families in South Dakota, which strongly suggests that this element is taken by many in quantities detrimental to health. The discussion of these non-essential elements would be beyond the limits which I must set for these lectures.

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EMPYEMA AND ITS MANAGEMENT*

GROVER C. PENBERTHY, M.D.,† and CLIFFORD D. BENSON, M.D.‡

DETROIT, MICHIGAN

Since the World War empyema has been a disease of great interest to the medical profession. Because of the high mortality in our army camps, the Empyema Commission was created by the Surgeon General. This Commission formulated three cardinal principles which still form the bases of modern day therapy. These principles are:

1. Avoidance of creating an open pneumothorax in the formative stage of the disease.
2. Sterilization and obliteration of the empyema cavity.
3. Supportive measures to raise the resistance of the patient.

To successfully treat a case of empyema requires the continued interest and attention to the medical, surgical and roentgenological aspects of the disease. During the past eighteen years numerous variations in the surgical technic of treatment have been advocated by leading authorities and for years the question of open and closed drainage has been frequently discussed. Each method has its particular indication and merit. Those surgeons having considerable experience in treating empyema by either method have reached one fundamental conclusion, namely, that the type and severity of the pneumonic process preceding the empyema, determines the mortality. Closed drainage as a preliminary or sole method of treatment is not given support by many, but if strict adherence to details is practiced, excellent results will follow, especially in children. In institutions with limited medical and nursing supervision, open drainage with rib resection probably gives the best results. Until the pneumonic process has subsided repeated aspirations are of paramount importance to tide the patient over the critical period of cardiac and respiratory embarrassment. Aspiration as a sole method of treatment is possible only in the rare case. In attempting to treat empyema by repeated needle aspirations, there is the obvious danger of allowing the optimum time for surgery to slip by with its subsequent complications, such as chronic empyema, septicemia, tendency to recurrence, failure of the lung to re-expand, and metastatic lesions.

Mortality Rates of Pneumonia and Empyema (Graph I)

In the ordinary case of empyema with a full cavity, the site of drainage is either the seventh or eighth interspace in the mid-axillary or posterior axillary line. In localized empyema, naturally, drainage must be in the area of localization.

It is well recognized that the institution of open drainage should be delayed longer when the organism is the streptococcus than when the infection is from pneumococcus. In the former, one usually has a full cavity

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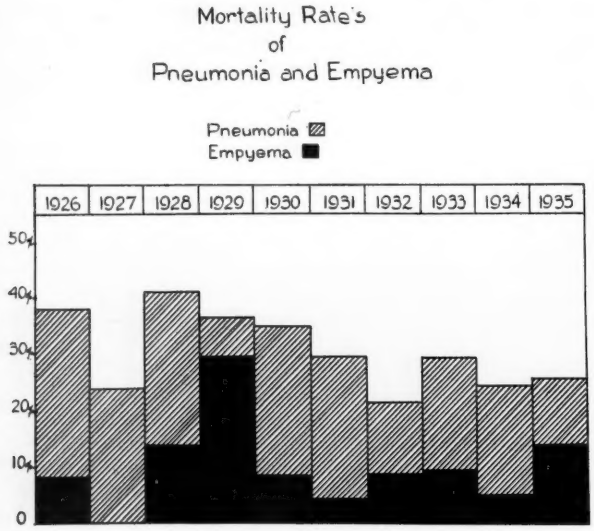
†Dr. Penberthy is a graduate of the Medical School, University of Michigan, 1910. He is Surgeon at Harper Hospital, Detroit; Director, General Surgery, Children's Hospital of Michigan; Associate Surgeon, Herman Kiefer Hospital; Consulting Surgeon, Receiving Hospital and Charles Godwin Jennings Hospital; Clinical Professor of Surgery, Wayne University College of Medicine; Non-resident Lecturer, University of Michigan Medical School.

‡Dr. Benson graduated B.S. from the University of Wisconsin, 1926, and M.D., Northwestern University Medical School, 1929. He was an interne and resident in general surgery, Harper Hospital 1928-1933; resident in thoracic surgery, Herman Kiefer Hospital, Detroit, 1933-1934. He is Assistant Surgeon to Out-Patients, Harper Hospital; Assistant Surgeon, Children's Hospital of Michigan; Consulting Surgeon, Trinity Hospital, Detroit.

and adhesions are slow in forming to prevent lung collapse.

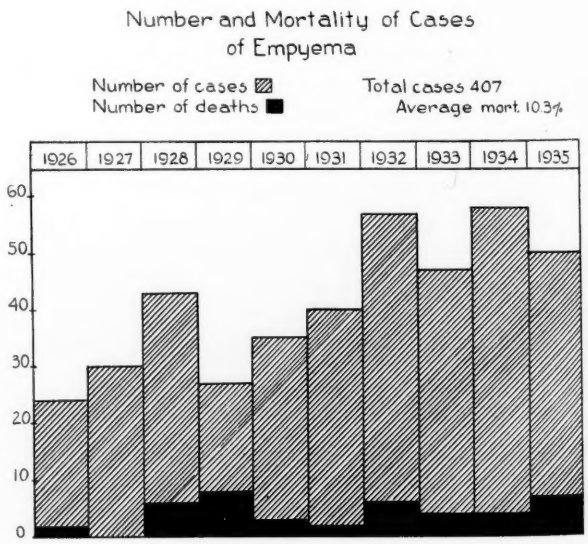


Graph I.

In a large series of cases treated over a number of years, it has been our practice in treating empyema in children, to employ a method of surgical drainage which combines the principles of closed and open drainage. Briefly this is as follows: Aspiration is repeated up to the stage when frank pus (pea green) is obtained. At this time the trocar-cannula-catheter method of closed drainage is instituted under local anesthesia with the patient supported in a sitting position by a nurse. The catheter is clamped between aspirations so that a closed system is maintained. The empyema cavity is aspirated in the operating room up to the point where reflex coughing or a small amount of blood tinged pus appears in the syringe. The patient is then returned to the ward. There has been no evidence of shock, circulatory or respiratory distress. Further aspirations are carried out every four hours by the house officers or graduate nurses trained in this technic. The majority of cases in the earlier years of this series were irrigated with 0.5% sodium hypochlorite solution (Dakin's Solution) following aspiration of the pus; in the later years, irrigations have been used less often with no material difference in prolonging the morbidity. It is observed and reported by others, that with this type of closed drainage there may be some leakage of pus around the tube, however, this occurs at a time when the empyema cavity is practically empty, and should be no cause for alarm or delay in changing the catheter. The original catheter is left in place from twelve to eighteen days, when it is cut and allowed to remain as an open drain. In the event there is clinical evidence of fluid, the catheter is replaced by a larger tube. It may be necessary to use local or nitrous oxygen anesthesia before inserting the larger tube, since this lessens the mental trauma in a child who has been seriously ill. We have not found it necessary in more than ten years involving a series of 407 children to resort to rib resection for adequate drainage except in the following cases:

1. Four patients developed recurrent empyema after the procedure outlined but later made good recoveries.
2. Eleven other patients:
   A. In five the pus was too thick for catheter drainage as the initial treatment.
   B. Six infants (1926-1927) reason not recorded.

In this group of fifteen patients, the average mortality was 6.7% and a mean morbidity period of 78.9 days.

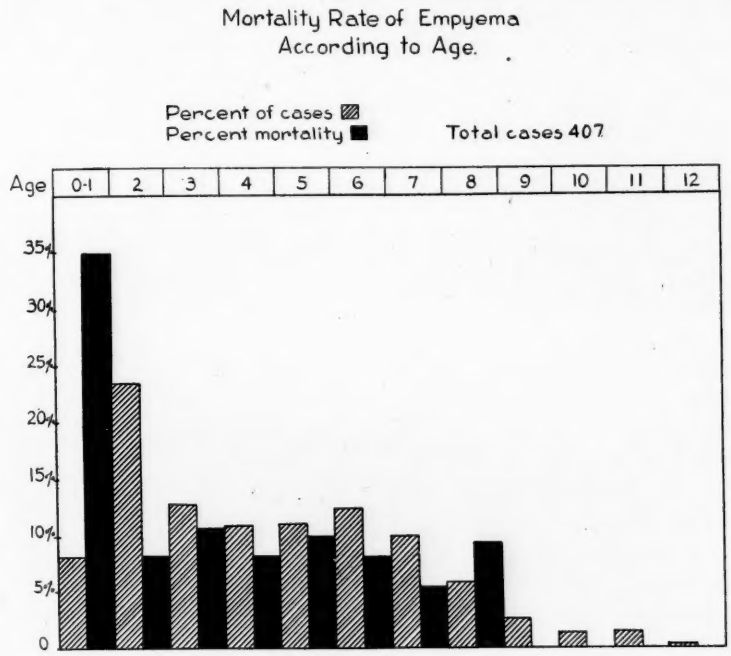


Graph II.

Number and Mortality of Cases of Empyema (Graph II)

In this series of 407 children with empyema treated by the method described from 1926-1936, 365 recovered with good clinical results, except the fifteen patients previously mentioned. It is well recognized that the highest mortality of empyema is encountered in children under two years of

age, as is shown in Graph III. The average mortality of this group of 407 children treated during this ten year period was 10.3 per cent. During the past two years it has been our practice to institute closed drainage in children two years or younger, as



Graph III.

soon as pus is obtained by aspiration. They will not withstand the period of waiting for thick pus to form because of their extreme liability to acidosis and subsequent vomiting.

Mortality Rate of Empyema According to Age of Patient (Graph III)

There were three cases of chronic empyema in this group of 407 children who required a major surgical procedure; one required an unroofing of the empyema cavity with a subsequent good result; one with a tuberculous empyema and mixed infection recovered by using closed drainage followed by a two stage thoracoplasty; the remaining patient died from surgical shock following a decortication of the visceral pleura.

The treatment of empyema in adults differs but slightly from that of children, the technic of closed and open drainage works well in most cases, but rib resection may have to be done more often in adults to obtain good surgical drainage.

Empyema which is due to sudden rupture of a large pulmonary abcess into the general pleural cavity causing a putrid empyema requires open drainage with rib resection, if the patient survives the shock of the initial fulminating pleural infection. With this type of empyema there is an anaërobic infection which is very liable to rapidly invade the soft tissues of the chest wall after either needle aspirations or the closed type of catheter drainage. Therefore, *the latter type of treatment is contraindicated* because experience has shown that this fulminating cellulitis of the chest wall usually is a fatal complication; *early open drainage with rib resection is the treatment of choice in these cases.* If the lung abscess has ruptured slowly into the pleural cavity or the point of rupture has been small, adhesions usually are formed and lead to an encapsulated putrid empyema. This type of empyema responds to open drainage and rib resection with subsequent healing of the associated pulmonary abscess.

All patients with empyema require strict attention to their nutritional needs. There is usually an associated secondary anemia which is best treated by repeated small blood transfusions since they greatly fortify the patient and tend to markedly reduce the period of morbidity.

In those patients with a large pneumothorax persisting after removal of the pus and in whom re-expansion of the lung has been slow, we have materially shortened the period of morbidity in the past two years

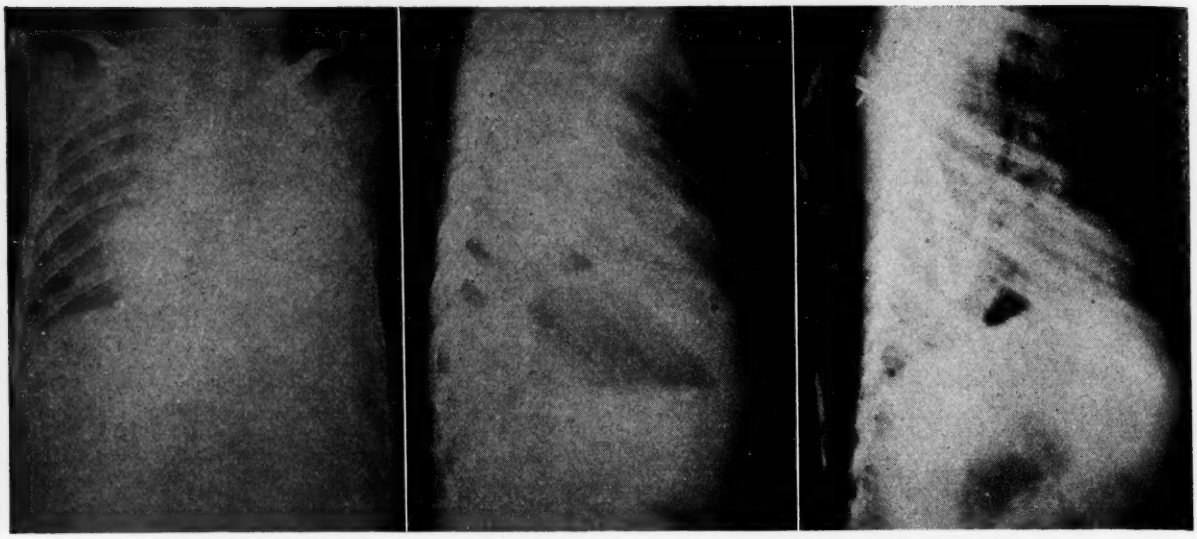


Fig. 1 (*left*). Anteroposterior radiograph of the chest shows uniform density of the left lung field with some displacement of the heart and mediastinal contents to the right, indicating a pleural effusion. From this radiograph, one would not be able definitely to outline the location of the fluid.

Fig. 2 (*center*). A lateral projection, with the left side nearest the film, demonstrates the presence of the fluid in the interlobar space. This illustrates the necessity of making films in the lateral projection to determine more accurately the location of the fluid accumulation. In this instance, if the lateral film had not been made, thoracentesis would undoubtedly have been attempted in the posterior axillary line region, too far posteriorly and beneath the fluid.

Fig. 3 (*right*). The position of the catheter in the pleural space after drainage had been instituted. The catheter was introduced in the mid-axillary line region between the sixth and seventh ribs.

by applying the Wangensteen method of suction.

Presentation of Cases

Case 1.—A young woman, age eighteen, white, was admitted to the hospital January 13, 1936, with history of having had an upper respiratory infection one month previously. This was followed by a bronchopneumonia involving the left lung. On admission her temperature was 102 degrees, pulse 130, respiration 18 per minute. The pneumonic process was complicated by fluid in the left chest and a portable x-ray examination of the chest was taken two days before entrance to the hospital and this showed an extensive empyema on the left side. The organism was found to be streptococcus on culture by diagnostic aspiration. Closed drainage was performed under local anesthesia on January 14, the site being in the eighth interspace in the left posterior axillary line. Within twenty-four hours the temperature and pulse were normal and remained so. On January 26 (two weeks) the patient was up in a wheel chair and the catheter was cut on February 5 and left as an open drain. The patient was discharged on February 7 and on February 14 a fluoroscopic examination of the chest revealed that there was no fluid in the left pleural cavity and the lung to be 80 per cent re-expanded. The tube was removed on this date and the patient went on to an uneventful recovery.

Comment.—This case was interesting in that the streptococcus empyema was drained using only the initial catheter drainage with subsequent recovery.

Case 2.—A white man, aged thirty-six years, was admitted to the hospital on November 27, 1935, with a history of having had a right lower and middle lobe pneumonia, the onset occurring four weeks previously. On admission the temperature was 100 degrees, pulse 110, respirations 20. He had had a fever ranging from 100 to 104 degrees daily for two weeks and the right pleural cavity had been aspirated twice during the past ten days; thick creamy pus being obtained. Examination of the chest revealed dulness and absence of breath sounds at the right base, posteriorly. X-ray examination of the chest with anteroposterior and lateral films revealed an encapsulated empyema posterior to the right posterior axillary line. The pus on aspiration was very thick and on culture pneumococci were found. An open intercostal drainage without rib resection was instituted in the ninth interspace posterior to the right post-axillary line under local anesthesia. There was profuse drainage for twenty-four hours and within three days the temperature was normal and remained so. This patient had a very severe secondary anemia when admitted: Hemoglobin 40 per cent. Red blood cells 2,200,000. White blood cells 23,000. Polymorphonuclear cells 92 per cent. Two transfusions of 200 c.c. of blood were given by the indirect method on successive days. On December 13 the empyema cavity measured 15 c.c. and on December 21 an x-ray examination of the chest revealed no fluid level. Two days later the empyema cavity measured 10 c.c., therefore, the tube was removed and the patient discharged on December 30. This patient was up and about his home and returned to work on January 15, 1936.

Comment.—This patient was very septic and anemic on admission to the hospital. This case illustrates the need for anteroposterior and latteral x-rays of the chest to locate the proper site for surgical drainage. The period of morbidity and disability was approximately forty-five days.

Case 3.—A white male child, aged four years, was admitted to the hospital on April 3, 1936, with a history that he had had an upper respiratory infection two weeks previously followed by a left lower lobe pneumonia.

Examination upon entrance to the hospital, temperature was 102 degrees, pulse 120 and respirations 30. There was dulness in the left chest posteriorly with absence of breath sounds. An x-ray examination revealed slight displacement of the heart to the right and a slight clouding of the left side of the chest. A diagnostic aspiration was performed in the seventh interspace in the posterior axillary line and clear fluid which was negative on culture was obtained. White blood cells, 37,000. Polymorphonuclear cells 96 per cent. On April 9 fluoroscopic examination revealed the fluid to be encapsulated in the left interlobar region but a daily fever of 100 to 102 degrees continued, with a white count varying from 25,000 to 30,000 with 85 per cent polymorphonuclear cells. On April 23 he was transfused with 100 c.c. blood by the indirect method. X-ray examination of the chest with anteroposterior and lateral films revealed a shadow still present in the left interlobar region. On April 29 the trocar-cannula-catheter method of surgical drainage was done under local anesthesia. The trocar was inserted in the eighth interspace in the left axillary line; 75 c.c. of pea green pus was aspirated at this time. An x-ray examination of the chest on Mav 11 showed no fluid to be present, the temperature was normal and the general condition of the patient excellent. The catheter was cut and allowed to remain as an open drain at this time and the tube removed. He was discharged the next day, the lung being completely re-expanded with no evidence of fluid in the chest. Examination on June 24 disclosed the left chest to be normal.

Comment.—This case represents an instance of interlobar empyema and again emphasizes the importance of taking *lateral films* of all cases of empyema so that the location of the fluid may be accurately ascertained before operative procedures are undertaken. The period of morbidity was approximately six weeks but only 19 days elapsed from the time of surgical drainage to complete recovery.

Case 4.—A white man, forty-six years old, was admitted to the hospital February 5, 1936, with a severe pneumonia of the right middle and lower lobes. This was of a possible embolic nature from a previous thrombophlebitis of the right saphenous vein. During the course of the pneumonia he was very ill and cyanosed, necessitating the use of an oxygen tent for about one week. At the time of consultation (March 19) the temperature was 104 degrees, pulse 120 and respirations 20. There was dulness on percussion and an absence of breath sounds at the right base in the right axillary line and the pus on culture was found to be pneumococcic in type; the pus was pea green with some fibrin. On March 20 a closed drainage was instituted under local anesthesia in the 8th interspace in the right axillary line. About 150 c.c. of pea green pus was aspirated in the operating room. Following this the temperature receded but varied from 99 degrees to 101 degrees daily. On March 24 the temperature ranged from 100 to 104 degrees as formerly. He had a very severe distressing cough and there was ineffectual drainage through the tube. The positive pressure within the pleural cavity was so great that it was impossible to maintain the drainage tube in the pleural cavity, therefore, on March 28 under nitrous oxide anesthesia about 1.5 inches of the eighth rib was resected in the right axillary line and open drainage instituted. There was adequate drainage but there was evidence of bronchopleural fistula, therefore, irrigations were not done post-operatively. The temperature gradually became lower varying from 98.6 to 101 degrees daily until April 15 when there was no drainage and the tubes were removed. Following this the temperature returned to normal and remained so. An x-ray examination of the chest on April 15 showed no fluid level but a pneumothorax cavity measuring about 300 c.c. On April 20 there was no evidence of a bronchopleural fistula, and he was allowed to be up and out of bed on April 23. He was discharged from the hospital on April 27 there being no drainage from the wound at that time. An x-ray examination of the chest done on May 18 showed complete obliteration of the empyema cavity. He had gained 30 pounds in weight and was told that he could return to work.

Comment.—The origin of the primary pulmonary pathology was probably embolic in nature because of the previous acute thrombophlebitis of the right saphenous vein. Closed drainage was ineffectual because of the high intrapleural pressure secondary to the broncho-pleural fistula which healed spontaneously after adequate drainage was obtained by rib resection and open drainage. The fact that the temperature remained normal after the tubes were removed indicated that their presence created sufficient irritation to cause a low grade daily fever. The period of hospitalization was approximately five weeks, from the time the empyema was first drained until his discharge.

Case 5.—A white man, aged forty-three, was seen in consultation at his home on November 3, 1936, with a history that six weeks ago he had had a tonsillectomy. Two days after the operation pain was noticed in the left chest and since that time he has continued to run a fever. For the past three weeks he has expectorated small amounts of purulent sputum. Examination at this time revealed a moderately well nourished patient, who appeared quite septic. Temperature was 102°, pulse 110, respirations 20. There was limited expansion noted on the left side of the chest. There was dulness at the left base posteriorly with absence of breath sounds. An x-ray examination on the previous day revealed fluid in the left pleural cavity posteriorly. Patient was again seen on November 5 and at this time 500 c.c. of foul, purulent fluid was aspirated from the left pleural cavity. A diagnosis of lung abscess which had perforated and formed a localized empyema of the putrid type was made. He was transferred by ambulance to the hospital on November 8 and an open drainage with resection of the eighth rib in the left posterior axillary line was performed. About eight ounces of foul pus immediately escaped from the empyema cavity and this was

cultured and the organisms found were pneumococci and numerous spirochetes (mouth organisms). Two large soft rubber tubes were placed in the empyema cavity and adequate drainage was obtained. The temperature immediately dropped to normal within forty-eight hours and his general condition was greatly improved by small blood transfusions. Patient was allowed up in the chair on November 27 and an x-ray examination of the chest on December 4 revealed no fluid in the left pleural cavity but a pneumothorax cavity which measured 120 c.c. The tubes were removed on December 7 and the patient was discharged home on December 8. Since that time he has made an uneventful recovery and an x-ray examination on December 13 revealed slight thickening of the pleural surface at the site of the former empyema, the lung was completely re-expanded and there was no evidence of fluid.

Comment.—This case was interesting in that the empyema which was of the putrid type following the rupture of a lung abscess went on to an uneventful recovery as soon as adequate surgical drainage was instituted. In this case the repeated small blood transfusions undoubtedly hastened his recovery.

Summary

1. The three fundamental principles propounded by the Empyema Commission still form the basis of our modern therapy of empyema.
2. A uniform method of treatment combining the principles of open and closed surgical drainage is presented.
3. Four hundred and seven children with empyema were treated by this method over a ten year period with a mortality of 10.3 per cent.
4. There is a definite parallelism between the mortality of pneumonia and empyema in any given series of cases treated over a period of years.
5. The frequent use of fluoroscopic and roentgen observation is very necessary in the follow-up period of treatment to gain the best results.
6. In treating empyema, individualism must be practiced since each patient demands his own particular form of therapy.
7. Cases are presented illustrating the various types of empyema and their subsequent treatment including results.

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SERUM TREATMENT OF PNEUMOCOCCUS PERITONITIS

WARREN B. COOKSEY, A.B., M.D.†
DETROIT, MICHIGAN

The management of pneumococcus peritonitis has remained a subject of considerable debate for a good many years. That the mortality is high is universally accepted. It is therefore of considerable importance that any clarification of the various adjuncts to treatment of this disease be as complete as possible.

In 1926 Lipshutz and Lowenburg[2] reported twenty-three cases with a mortality of 100 per cent. They state: "Pneumococcus antiserums, Types I, II and III, are useless in combating the mortality." May it be noted that they used the unconcentrated sera in much smaller dosage than is now in vogue. In 1931, Duncan[1] reported thirty-four cases with a mortality or 57 per cent. He states: "The use of antiserum is wholeheartedly recommended." Various standard text books of medicine and surgery comment on the use of antiserums, some advocating and others discouraging its use. The subject therefore remains in a decidedly unclassified state.

In this paper is presented the data of a case of pneumococcus peritonitis in which serum therapy, using the modern Felton concentrate intravenously in large dosage,

†Dr. Cooksey was graduated A.B., University of Kansas, 1922; M.D., Harvard Medical School, 1926. He is Medical Consultant to the Florence Crittenden Hospital, Attending Physician to Out-Patient Department, Cardiology, Harper Hospital, and Instructor in Medicine, Wayne University Medical School, Detroit.

was employed. There seems to be no doubt whatsoever that in this case at least, great benefit, if not curative value, was derived from the procedure. In the final evaluation of such a method of treatment only a large series of cases so treated will make possible accurate analysis; but it may be reasoned that if undisputed value is evident in any one case, considerable value is to be derived in any similar case.

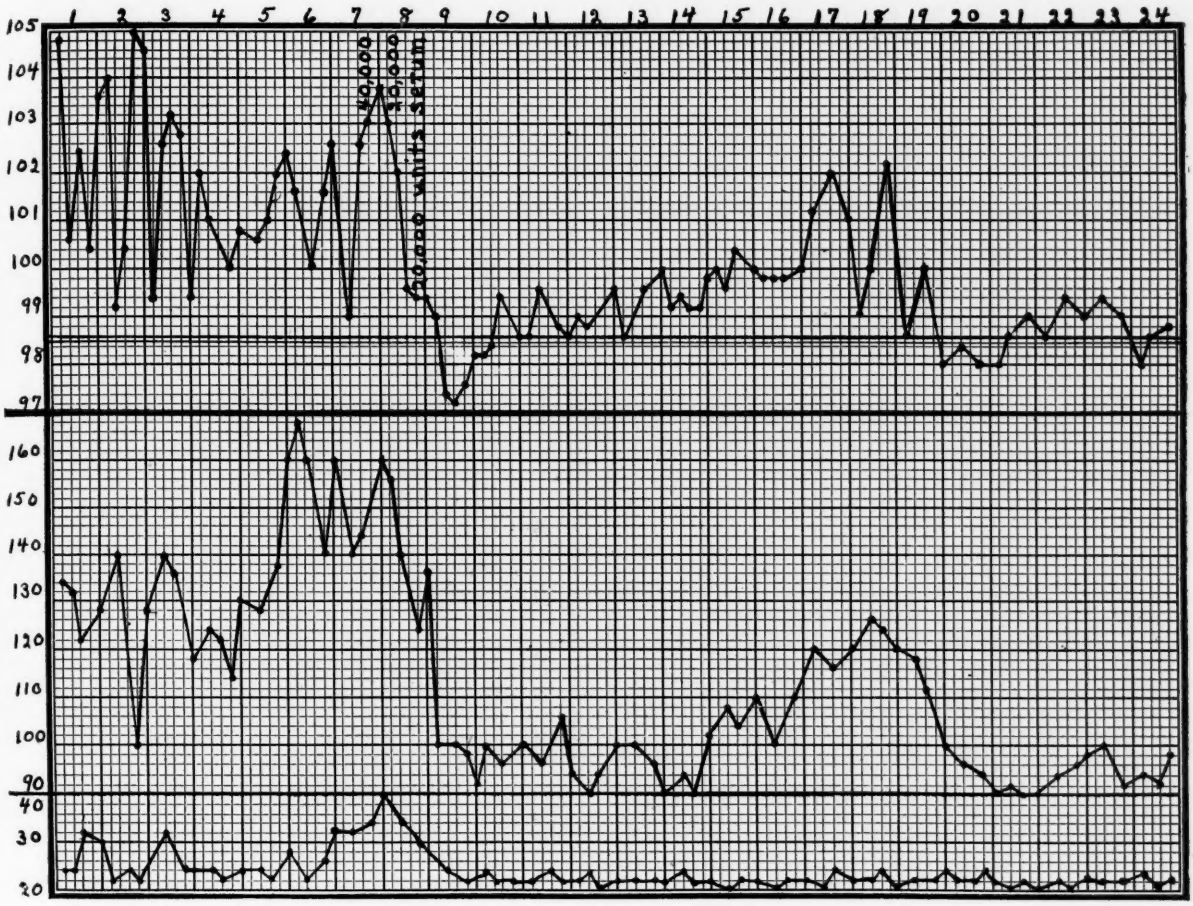

Chart I.

Case Report

A school girl, aged nine, entered Harper Hospital July 16, 1936. She had been at camp for two weeks. On July 12, 1936, she was seen by her mother who noted that she looked tired, but no complaints were elicited. At 3:00 A. M. the day of entry, she was awakened with severe lower abdominal pain. She soon vomited and it was noted she was feverish. Some headache and stiffness of the neck were admitted. There was no complaint of coryza, cough or diarrhea. Her tent-mate had been taken to the hospital with pneumococcus Type I pneumonia two days before her own entry.

Her past history was unimportant except that she had had infantile eczema.

The physical examination revealed a temperature of 104.8° F., pulse 136, respiration 24. She was described as being a very toxic, sick looking child who was quite drowsy. There was slight nuchal rigidity and extreme generalized abdominal tenderness with considerable voluntary spasm. The remainder of the physical examination was negative.

Laboratory reports were as follows: July 16—Blood count: red blood cells 4,190,000, white blood cells 9,900; polymorphonuclear cells 83; large 12, small 5. Urine: Negative. Spinal Fluid: Clear, no cells. Negative globulin. Sugar: .091. Kahn: Negative. Throat culture: Miscellaneous bacteria. X-ray examination of chest: Negative for circulatory or pulmonary disease.

July 18—Blood count: White blood cells 23,200; polymorphonuclear cells 95; large 5.

July 20—Blood culture reported positive to pneumococcus Type I.

As indicated by the chart, the patient continued to run a high temperature. A diagnosis of primary pneumococcus peritonitis was made and conservative management instituted. Six days after entry, the temperature was 103.8° F., pulse 142, and respiration 32. She was semi-comatose and her condition was considered critical. On consultation, it was decided to give pneumococcus serum in spite of a history of allergy. Therefore, 80,000 units of Felton's pneumococcus Type I serum was administered intravenously in three doses within twenty hours. As shown by the temperature chart, within twelve hours of the last dose the temperature was 97.4° F., pulse 100, and respiration 22. There was a slight subsequent rise over the following few days,

and on the seventeenth and eighteenth days the temperature reached 102° F. At this time it was thought a localized abscess was forming in the left lower abdomen. One day there was slight blood-stained discharge from the vagina. The abdominal localization did not materialize and, as shown by the chart, she was discharged from the hospital on the twenty-fourth day of her illness. Her recovery was complete and without any further complications.

I believe the data on this patient are conclusive that serum therapy is of value and always to be considered a part of one's armamentarium in the therapy of pneumococcus peritonitis. As is the case in the serum treatment of pneumonia, large doses are probably essential to proper results. It is extremely interesting in this case that in spite of the fact serum was given on the sixth day of the disease, spectacular results were obtained. It has been said by various writers dealing with specific type pneumonia that the serum is of little value unless given early. Such would not seem to be the case in this instance. Early diagnosis, however, must be of great value in this disease. And since it is essential to obtain the specific type before serum can most efficiently be used, material for bacteriologic diagnosis must be obtained as soon as possible. Various methods for rapid diagnosis of blood stream invasion have been used and are to be recommended. For some years it has been the practice in certain hospitals to use abdominal paracentesis so that material may be obtained early for a positive diagnosis. Such a method is to be recommended for certainly in many cases the specific type could be determined by such a procedure within twenty-four to thirty-six hours after hospital entry. Time alone will justify any undue enthusiasm which might arise from this one case, and a true evaluation of serum therapy in this disease must await a large series of carefully controlled and vigorously treated cases.

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CLINICAL STUDY WITH INSULIN PROTAMINE*

J. H. CHALAT, M.D.,† and ALICE H. SMITH, B.S.
DETROIT, MICHIGAN

This study was undertaken to determine the value of insulin protamine in severe cases of diabetes mellitus where treatment with standard insulin was unsatisfactory. The investigation includes seven ambulatory cases of diabetes mellitus of long standing, seen daily at the city physicians' office.

Blood sugar determinations were made daily except Saturday and Sunday, and the proper amount of insulin prescribed for the day. The blood sugars were reported twenty-four hours after they were taken, and immediately upon receipt of the report, the insulin dose was prescribed; for example, a blood sugar determination taken on May 15, 1936, was reported to the physician on the morning of May 16, 1936, at which time he ordered the insulin dosage for May 16, 1936. The protamine insulin in all but one of these cases (Case 1, W. P.) was given before the evening meal, and to prevent severe reactions, the insulin before breakfast of the next day was omitted. The material used was supplied by Eli Lilly & Company, the insulin being dissolved in a protamine prepared from the sperm of Salmo Iridius, the same material used for investigation and reported in the *Journal of the American Medical Association* on January 18, 1936, by Drs. H. C. Hagedorn, B. Norman Jensen, N. B. Krarup, and I. Wodstrup of Copenhagen, Denmark.

*From the Detroit City Physicians' office.

†Dr. Chalat is a graduate of the University of Michigan '15-'17 M. He was interne at Mt. Sinai Hospital, Cleveland, Ohio. He has been in charge of The Diabetic Clinic, City Physicians' office, Detroit, since 1930.

Case Reports

Case 1.—W. P., aged fifteen. When this patient was two years old, it was discovered that he had diabetes mellitus. At the age of four years, he was brought from Texas to Detroit, Michigan, where he was put on a diet. At the age of five years, he was taken to University Hospital, Ann Arbor, Michigan, where he was given a high fat diet, no insulin. He spent from six to eight months of each of the next five years in University Hospital. During one

of these visits, insulin was started, and some improvement was noted. The patient then returned to his physician in Detroit. He was given a high CH diet and insulin. Marked improvement was made. The physician died and the child was not treated regularly, although the mother attempted to follow previous directions. For five years no blood sugars were taken. At the age of twelve or thirteen, patient's mother realized that the child had ceased to grow. Several physicians were consulted, but no treatment was suggested.

On January 8, 1936, the child was registered at City Physicians' Office. At the time of registration, his height was 4 feet, 10 inches; weight, 78 pounds; basal metabolism, plus 9 per cent. The patient followed a diet of CH 215 gm., P 78 gm., F 123 gm., with 40 units of U 20 insulin medication, previous to the clinical investigation with blood sugar tests —results obtained ranged from 240 to 400.

Clinical investigation with insulin protamine was begun on April 6, 1936, with 16 units of insulin before lunch and 16 units insulin protamine before bedtime—gradually being brought up to 38 units of insulin and 20 units of insulin protamine. On the twelfth day of the investigation, the blood sugar registered 110. During the next fourteen days, the blood sugar fluctuated between 110 and 220. Another increase in insulin, 40 regular and 20 insulin protamine, brought the blood sugar to 70, where it remained for a week and was followed by a violent hypoglycemia, necessitating hospitalization. Upon recovery the dosage of insulin was dropped to 28 regular and 20 insulin protamine—blood sugar fluctuating between 80 and 160.

His present weight is 95 pounds, and the height is 60½ inches. He reports improvement in general well-being.

Case 2.—G. B., a white woman, thirty-two years old. The diagnosis of diabetes mellitus was made at the age of twenty-eight years. Patient was given a "no sweets" type of diet with insulin. Two years ago, she was hospitalized and given a high fat diet with insulin. She was hospitalized again one year later and was given a very low caloric diet, approximately one thousand calories. Her maternal aunt and uncle were also diabetic.

On November 12, 1935, patient registered at City Physicians' Office. Previous to our clinical investigation, seven blood sugar determinations were made, ranging from 66.6 mg. to 380 mg. per 100 c.c. blood. The maximum dose of insulin was 60 units of U 40 daily.

The clinical investigation started on April 6, 1936, with 10 units of insulin protamine and a corresponding decrease of regular insulin. By a gradual increase of insulin protamine and a decrease of regular insulin, the blood sugar was reduced to 122. The dosage at present is:

No insulin before breakfast
10 units regular insulin before lunch
20 units insulin protamine at evening meal.

The blood sugar fluctuates from 67 to 110, with the usual Monday rise.

Patient states that since the new insulin was started, she has been free from a "constant sensation of hunger." This patient's menses, absent for three and one-half years, returned during the first week of treatment, and she has been menstruating regularly since.

Case 3.—H. M., aged seventeen. This case was diagnosed as diabetes when the patient was twelve years old. The family was visiting in Philadelphia when Hilda became ill. She was admitted, in a state of coma, to a Philadelphia hospital, where she remained two weeks. Insulin was administered, and patient was given high CH-low fat diet. Upon her return to Detroit, patient was attended by a private physician for six months. Patient's father heard about "Electro-Vita" mineral water, which was "very good for diabetics." Patient dieted (as instructed in Philadelphia) and took insulin along with the mineral water, but did not see a physician.

At the end of six months, the patient lost so much weight that her parents expressed alarm to the mineral water salesman, who referred them to a physician who also recommended said water for diabetics. Upon his order, insulin was discontinued. At the end of three months the patient had not gained weight. She then went to some other physician who administered a special medication for diabetic patients, and gave her a diet, but no insulin. The patient continued to lose weight during this time. For the next nine months the patient treated with an osteopath who gave her a very low caloric diet and suggested a starvation period of three days. Her weight went down to seventy-five pounds, and the parents became alarmed. They then gave her a diet similar to the first one she had, and started insulin, too.

The patient registered at the City Physicians' Office on October 11, 1934. She has been taken to a hospital, in a state of coma, twice.

Clinical investigation started on April 6, 1936. The patient weighed 120½ pounds when she registered at the City Physicians' Office; 134½ pounds at the beginning of the investigation; her present weight is 132¼ pounds (fasting). Previous to this investigation, twenty-two blood sugar determinations were made—four of them were less than 200 mg. per 100 c.c. blood, and five were between 300 and 400 mg. per 100 c.c.

The investigation started with the same procedure as the two previous cases. The dosage of insulin at present is as follows:

None in the morning
20 of U 40 before lunch
20 of U 40 and 25 units of insulin protamine at the evening meal.

The result is that the blood sugar fluctuates between 55 and 213 per 100 c.c.

This patient was most difficult to control; although she was intelligent and conscientious about dieting.

Case 4.—T. A., aged forty-two. This case was diagnosed in 1925 (eleven years ago) as diabetes mellitus. The patient was hospitalized shortly afterward for one month in the University Hospital at Ann Arbor, Michigan, where he was given a high fat diet. He was again admitted to the same hospital in 1929, this time being treated with a high fat diet and insulin. Upon his return to Detroit, he went to a clinic. Again, in 1929, he was hospitalized in Harper Hospital, Detroit, Michigan.

The patient registered at the City Physicians' Office in January, 1934. In 1935, his diet was changed to a fairly high CH diet.

The patient states that he feels better with the administration of insulin, but constantly feels weak.

Before the case was diagnosed as diabetes mellitus, the patient weighed 136 pounds. During 1929, after administration of insulin, he reached a peak weight of 166 pounds. At the beginning of this study, his weight was 147 pounds. At the present time, he weighs 140½ pounds (fasting).

Previous to this study, thirty-seven blood sugar determinations had been made in this clinic, of which three were under 200 mg. per 100 c.c. blood, and three were over 300 mg. per 100 c.c. The maximum dose of insulin was 165 units of U 40 daily.

The present investigation started on April 6, 1936, with immediate improvement. The blood sugar readings remained low throughout the period except for concurrent infections: (1) Nasal; (2) bronchial; (3) abscess. His insulin dosage at present is:

None in the morning
5 units of U 40 at lunch
25 units of insulin protamine at night.

Blood sugar readings for the last month are 53 to 133 per 100 c.c. of blood.

Case 5.—R. S., a white male of fifty-two years. The diagnosis of diabetes mellitus was made sixteen years ago. No definite history of diabetes in the family. The patient states, however, that his father died from "some kind of kidney trouble." This patient treated with an osteopath for nine years. During this time he was on a high carbohydrate diet with insulin. He has been hospitalized once for a period of two weeks. For a period of time, he attended a local clinic, gained in weight and felt good.

The patient registered in the City Physicians' Office on October 15, 1935. His weight at the time of registration was 156½ pounds; at the beginning of this study, April 27, 1936, his weight was 160½ pounds; his present weight is 154½ pounds (fasting).

Blood sugar taken before investigation started fluctuated between 55.8 and 178 per 100 c.c. of blood; diet consisted of CH 131 gm., P 70 gm., F 113 gm., with 60 units of U 40 insulin.

This clinical investigation started April 27, 1936, with 15 units of insulin protamine before the evening meal, which was followed by an immediate drop of blood sugar to 125 per 100 c.c. of blood. On May 21, 1936, food allowance had been increased to CH 166 gm., P 80 gm., and F 113 gm., without any change in insulin. The final insulin allowance is as follows:

None in the morning
10 units of U 40 at noon
15 units of insulin protamine at dinners.

Blood sugar records for the months of May, June, and July show a fluctuation between 53 and 148 per 100 c.c. of blood.

The patient reports a marked improvement in health and well-being.

Case 6.—S. R., a white Polish female of thirty-seven years, who has a family. When she was thirty years old, she had a complete physical examination. At that time, the diagnosis of diabetes mellitus was made. She was first treated by a private physician with a diet and without insulin. Later, she went to Grace Hospital Clinic where her diet was changed from a low CH, high fat to a high CH, low fat type; and insulin treatment was started.

The patient registered at the City Physicians' Office on January 26, 1934. Her weight at that time was 118 pounds. At the beginning of this study, April 20, 1936, her weight was 114½ pounds, her present weight is 113¾ pounds. Her best weight was 128 pounds, which was on December 17, 1935.

Previous to this study, seventeen blood sugar determinations were made, ten of them ranging from 250 mg. to 355 mg. per 100 c.c. blood. Her maximum dose of insulin, previous to this study, was 50 units of U 20 daily.

On the twenty-ninth day of this observation period, 38 gms. of available glucose was added to her diet.

This patient had a most stormy reaction at the beginning of the investigation. Although she did not require any hospital care, the morning insulin reactions were quite heavy, requiring an increase in the food allowance daily. At the end of the investigation, her insulin dosage consists of:

No insulin in the morning
10 units of U 40 at noon
10 units of insulin protamine at night.

The blood sugar fluctuates between 87 and 185 mg. per 100 c.c. of blood.

The patient reports improvement with the present method of treatment.

Case 7.—C. W., aged forty-eight. This patient is a white female who has been under our observation for over three years. Although the amount needed to control the diabetes was very small—5 units in the morning, 15 units at noon, and 10 units in the evening—I was curious to see whether insulin protamine could be used in such mild cases.

Previous to the clinical investigation, her blood sugar ran from 100 to 217, with insulin ranging from 15 to 25 units a day. On June 15, insulin protamine was used to substitute for the regular insulin. Her sugar is kept down between 70 and 128 throughout by 5 units of insulin protamine.

Case 8.—H. B., aged twenty-two. The diagnosis of diabetes mellitus was made nine years ago. There is no history of diabetes in the family. The patient was treated by a private physician for two years. During this time, he was placed on the so-called "starvation" diet without insulin, accompanied by a marked loss of weight. He later consulted another physician who changed the treatment to one with insulin and a high carbohydrate diet. For the next three years, the patient felt better and gained weight. During the year 1931, tuberculosis developed, and patient was confined to his bed for six months. This was followed by monthly treatment (pneumothorax) for one and one-half years. Lungs were checked in 1933 but not since then.

The patient registered in the City Physicians' Office on April 25, 1935. Patient's weight at that time was 131½ pounds; at the beginning of this study, 137 pounds; at the present time, 135¾ pounds (fasting). His best weight was 148 pounds, on November 19, 1935.

The insulin medication up to the beginning of the present investigation was entirely unsatisfactory—diet being: CH 103 gm., P 70 gm., F 149 gm., with 60 units of U 40 insulin per day. The blood sugar ranged from 95 to 333 mg. per 100 c.c. of blood.

The clinical investigation started on April 20, 1936, substituting 10 units of insulin protamine for the evening dosage of insulin. Changes were gradually made, until on May 6 blood sugar reached 83 per 100 c.c. of blood. For the past two months he has had the following dosage:

No insulin in the morning
20 units of U 40 at lunch
20 units of insulin protamine at night.

The blood sugar records were 78 to 125.

Comments

These cases demonstrate certain factors in common:

1. Fluctuations in daily blood sugar, possibly due to frequent changes in diet.

2. A uniform Monday rise in blood sugar, probably due to lack of exercise over Sunday as well as a disturbance in dietetics due to the holiday.

3. The material used was uniformly stable for at least ten days.

4. The action of the insulin protamine is prolonged. It is shown that insulin reactions occur from twelve to fourteen hours after the injection.

5. Insulin protamine, by its slow absorption, lengthens the period a patient is free from sugar.

6. There was no improvement in the patients' weights in spite of the improvement in the blood sugar.

Conclusions

1. In the above cases, where the blood sugar could not be controlled with the regular insulin, it was stabilized by the insulin protamine.

2. We feel that this investigation is of particular value inasmuch as patients whom we have observed are constantly exposed to the ordinary routine of living with its temptations (dietary), rather than being hospitalized.

Hemolytic Jaundice: Its Diagnosis, Behavior And Treatment: Review of Forty-five Cases

William P. Thompson, New York (*Journal A. M. A.*, Nov. 28, 1936), points out that during the last six years the Spleen Clinic has studied forty-five patients presenting hemolytic jaundice. These cases have all been followed at regular intervals by this combined medical-surgical group; frequent laboratory tests have been made by technicians directly responsible to this clinic; separate records of each patient have been kept and individual patients have been pursued, when pursuit was indicated. Nearly all splenectomies have been performed by Dr. Allen O. Whipple. The Spleen Clinic, after many attempts to classify further the diseases causing increased hemolysis of red cells within the body coincident with evidence of regeneration, has finally thought it wise to accept only two subdivisions. The first of these is a uniform, recognizable, curable entity: typical hemolytic jaundice. The second subdivision consists of a heterogeneous variety of disturbances grouped together under an intentionally vague term —the atypical hemolytic anemias. In all cases of typical hemolytic jaundice the peripheral blood contains the spherical microcytes that are believed to be as pathognomonic of this disease as are the sickle cells in sickle cell anemia. Typical hemolytic jaundice is a clear cut definite disease entity, the diagnosis of which depends on the finding of spherical microcytes, with their attendant fragility changes, in the peripheral blood. Once the active phase of this disease is established it will continue, with fluctuations in intensity, until splenectomy is performed. The splenic pathologic changes are uniform and characteristic. Splenectomy results in an immediate cessation of the increased hemolytic activity with a prompt return of the blood values to normal. These brilliant results have been observed in all cases and persist without exception for as long as sixteen years after splenectomy. The atypical hemolytic anemias comprise a heterogeneous group of disturbances that are associated with increased blood destruction and splenic enlargement. In some of their cases the primary disturbance has been neoplastic, in others infectious, in many unknown. Splenectomy is not indicated in this group. Correct clinical diagnosis before operation is therefore essential.

Diagnosis and Classification of Menstrual Disorders

The experimental data of John C. Burgh, G. S. McClellan, Claude D. Johnson and Eugene T. Ellison, Nashville, Tenn. (*Journal A. M. A.*, Jan. 9, 1937), show that primary and secondary ovarian failure are capable of producing the same endometrial lesions. The clinical correlation of symptoms and endometrium indicates that there is no single endometrial lesion always associated with a specific menstrual history, although there is a general tendency for certain symptoms to predominate in certain groups. In some instances, undoubtedly, a case has been incorrectly classified, as the lines of division between the types are not always clear. Admitting these weaknesses and the fact that as knowledge advances our conception of endocrine disease will materially change, the authors nevertheless believe that the clinical data, taken as a whole, strongly support their experimental observations. They have interpreted their experiments as indicating that ovarian function can be reduced by lesions affecting the ovary or by lesions affecting the hypophysis or other endocrine glands and that the disorders of menstrual interval and flow are the result of an ovarian underfunction. The severity of this underfunction is indicated by the state of the endometrium. Their clinical and experimental observations indicate the fallacies of present treatment. Serious discrepancies arise over the relative merits of the various treatments for the disorders of flow and interval. Some put their faith in thyroid, some in extracts of pregnancy urine and others in pituitary extracts or substance. All these are good in a certain percentage of cases but fail in the majority of instances. Since evolving this conception of menstrual disorders they have treated, to the best of their knowledge, the primary focus of the disease. Their clinical impression is one of a definitely improved therapy. Surgery, of course, has been necessary in some, and the results as usual are brilliant. It should be borne in mind that, no matter how brilliant the surgical result, it is at best a symptomatic cure. The glandular disturbance is not removed, and most active surgeons will find several instances among their patients in which the symptom has been relieved surgically but the endocrinopathy remains to invalid the patient.

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"Every man owes some of his time to the upbuilding of the profession to which he belongs."

—THEODORE ROOSEVELT.

EDITORIAL

PREPAREDNESS

THE latter part of 1935 and the early part of last year a number of articles on the general subject of cancer appeared in this JOURNAL. The object of these papers, six in number, was to urge upon the general practitioners as well as other physicians who see cancer first, the importance of being prepared, either to deal with cases of malignancy or suspected malignancy themselves, or where physicians do not feel that diagnosis and treatment of malignancy is within their scope, to see that the patient is in competent hands before turning him away. To the average person, a doctor is a doctor, presumed to understand the healing art in its totality. He is not much concerned with the specialties into which physicians group themselves. We repeat, however, that any physician consulted should not dismiss the patient without some definite understanding regarding the physician whom he should see.

This applies also to tuberculosis. There is a strong movement on foot for the elimination of tuberculosis. This will take a long time, much longer than the elimination of diphtheria or smallpox where there is a specific known prophylaxis.

The third problem which is facing us at the present time is the elimination of syphilis. The advice given in the first paragraph will apply to syphilis in double force. Within recent months there have appeared in many of the national magazines, articles by prominent physicians on the subject of syphilis, its cause, diagnosis and cure.

Whatever objection may be taken to the attitude of a few national magazines on the subject of socialization of medicine, there is full coöperation so far as the profession are concerned with the great majority of efforts to popularize the knowledge on cancer, tuberculosis and syphilis. The profession must be prepared to meet intelligently the demands of the public when their services are sought.

ROENTGENOSCOPY

MANY physicians doubtless feel that anything on such a subject as this can have but a remote interest for them. Such, however, is not the case. The roentgenoscope or fluoroscope, as it is usually called, is used extensively in setting fractures of the extremities. By means of the roentgenoscope, the surgeon is able to obtain a direct view of the actual bone lesion. This fact alone makes it indispensable when a complete approximation is attempted.

The roentgenoscope may prove dangerous to both the operator and patient. If the operator uses it frequently and is not careful to keep his hands out of the illuminated field, he may contract a very stubborn dermatitis, or worse, from the accumulative effects of the x-rays. Prolonged and uninterrupted use of the fluoroscope is fraught with dangers to the patient, dangers which are not immediately apparent since a leg or arm may be incased in a cast so as not to

be available to inspection for a number of days. There is probably no one more alive to the dangers attendant on x-ray examinations than roentgenologists themselves. A few precautions will make for safety. In examining the extremities by means of the fluoroscope, since the lesion is usually limited to a small area of the bone, the shutters of the fluoroscope should be closed down so that the opening does not include much more than the site of the lesion. The operator should protect his hands by means of lead rubber gloves. Since these are cumbersome, this precaution is very often neglected. Pupillary accommodation should be thoroughly relaxed, accomplished best by the operator spending at least ten minutes in a darkened room before attempting to use the roentgenoscope. Interval inspection by using the foot with the operating switch, a second on and a second off, is also advised.

Probably there is no other subject which is accorded such recurring attention in the journals devoted to roentgenology. The reader is referred to a recent paper in the January 1937, Vol. 37, No. 1, number of the *American Journal of Roentgenology* for a very thorough discussion of the subject, "The Dangers of Reducing Fractures Under the Roentgenoscope and Methods of Protection Against Them," by Stevenson and Leddy of the Mayo Foundation and the Mayo Clinic. The paper should be read by everyone who uses the x-rays either for diagnosis or for treatment. We quote two paragraphs from their conclusions.

"It cannot be emphasized enough that roentgenoscopic reduction of fractures of the extremities is a very dangerous procedure. The busy or careless roentgenoscopist may, in the course of a single reduction of a fracture, receive a severe injury to the dorsum of his fingers. He may also receive radiation below an actual erythema in quantity, which later, by cumulation, may give rise to injury of the skin. The patient at the same time may receive an erythema dose (or even an excessive dose) which may be masked by the pain of the fracture and which may not be detected because of inflammation following fracture, especially since the limb may be enclosed in a cast.

"Since the effects of roentgen irradiation are cumulative and evidence of injury may develop late, it is recommended that each operator keep a permanent record of the radiation he has received on his hands from all roentgenologic examinations. As an additional safety factor, the operator should calculate his maximal possible exposure and consider that he has received this dose even though additional protective factors may have been employed."

THE SYPHILIS PROBLEM

THE *Journal of the American Medical Association* for March 6, 1937, printed six papers on the general subject of syphilis and gonorrhea. These six papers contain a vast amount of authoritative information on the subject and doubtless they have been read by a large number of the readers of this JOURNAL. We print, however, herewith abstracts of these papers.

Clinical Problems in Syphilis Control Today

John H. Stokes, Philadelphia, brings out the fact that the League of Nations investigation brought to the dignity of statistical demonstration the fact that clinics, widely regarded as the chief instruments for the control of syphilis, are so inefficiently run the world over that 20 per cent of their early syphilis material has not received even the minimum of darkfield examination and serologic testing required by the past two decades of knowledge of the disease. Two adequate systems for the treatment of early syphilis can now be issued in black and white for public health and voluntary agents, including private physicians' reference and use; the British-Danish intermittent and the American continuous alternating. Of the two the coöperative Clinical Group and the United States Public Health Service believe they have proved the alternating continuous treatment to be the better. With new detection machinery in full movement, an enormous influx of seropositive latency is to be expected and must be evaluated and treated. Hospital, and outpatient and practitioner "pick ups" require (1) adequate complete physical examination, not mere listening through the shirt and tapping the knees; (2) with a negative physical examination the beginning of treatment, not by the first arsenical "shot" one can reach, but with bismuth subsalicylate weekly, while one gains the patient's confidence and a spinal fluid examination. For two reasons the author would place the syphilitic woman first rather than fourth among the modern problems of syphilis. Infectious early syphilis of a woman's genital tract is the *terra incognita* of the public health aspect of the disease. The relatively more benign and inconspicuous course of the whole infection, which Warthin rated as in her almost a disease in a different animal species, fills the terrain with the unexpected and unpredictable and makes epidemiologic and therapeutic certainties rare indeed. As soon as possible after the recognition of prenatal syphilis, especially of the tardive type, the spinal fluid should be examined in order to forestall the onset of grave neurosyphilis by fever therapy, precisely as one does in acquired syphilis. Few rules will thwart more tragic consequences. Of the therapy of neurosyphilis, Ravaut, who brought asymptomatic neurosyphilis to light, died ten years too soon. He suggested and would probably have shown that a great deal of neurosyphilis recovers of itself; that even the paretic formula is compatible with a long, effective and healthy life. It is clearly proved that asymptomatic neurosyphilis tends to be withheld from symptomatic expression or cured by a prolongation plus some form of intensification of standard treatment for the disease. The incidence of asymptomatic neurosyphilis is reduced practically to zero by sufficiently intensive treatment begun early in the disease. Injections of chemotherapeutic agents are merely medicated by the hand and head. Effective treatment for syphilis may indeed be mechanized to a certain perfection by knowledge. But the uprooting of the disease from

its hold on humanity is done by the eye, the voice, the understanding and sympathetic spirit, without which all the much gathering of knowledge is but the unliving dust.

The Serodiagnosis of Syphilis

H. H. Hazen, Washington, D. C., points out that a study of the tests used on the spinal fluid has revealed that certain of the flocculation tests are not suitable, although some others are just as efficient as are the complement fixation tests. Tests on patients who have been treated with malaria or with more than twelve injections of tryparsamide or fifteen injections of arsphenamine show marked discrepancies in the reports of individual observers. Tests on the fluid from untreated cases of cerebrospinal syphilis show more uniform results. In general it should be noted that even in untreated patients the sensitivity of many tests is unsatisfactory. It is certain that tests on the spinal fluid must be chosen with the greatest care. From the standpoint of specificity the Brem, Eagle flocculation, Kahn diagnostic and presumptive tests, Kline diagnostic and exclusion tests, Kolmer, and Lufkin and Rytz have been found to be satisfactory. From the standpoint of sensitivity the leading tests are the Kahn diagnostic and the Ruediger tests, with the Brem and Kline diagnostic tests close behind. Syphilis can often be diagnosed by other means than serologic. It may be true that during the early eruptive period the serologic test is much the best confirmatory evidence, but in the early chancre the darkfield in skilled hands is infinitely better. The mouth contains spirochetes very similar to Spirochæta pallida. It is conceivable that such organisms might be found on other portions of the body, if only for a short time. In late syphilis an x-ray study of the bones or the aorta may be invaluable. In neurosyphilis there are other valuable tests on the spinal fluid in addition to the serologic ones. Women who have been pregnant frequently show a negative blood serologic test. In this class the history of repeated miscarriages, or the finding of a syphilitic placenta, are of the greatest aid. Every pregnant woman should have her blood examined for syphilis, preferably during an early period. As is invariably the rule, a laboratory procedure is a good servant but a bad master.

Modern Clinical Management of Gonorrhea

P. S. Pelouze, Philadelphia, confines his dissertation purely to the medical side of the question, suggesting that a uniform history blank should be used throughout the country. With such uniformity it would be a rather simple matter to decide on the comparative values of the different types of treatment now in use. Also, the study of such histories would do much to teach those using them far more about the disease and the things that are or are not good for it, a gain that would reflect itself in many good ways. The one in charge of a treatment center should be really interested in the disease. Lack of such interest makes for poor work and for poor personnel coöperation. It does little toward disease reduction. Younger men in such dispensaries should be compensated for the services rendered. There should be a close alliance between the chiefs of dispensaries, their assistants, their local and state boards of health and the United States Public Health Service as a means of making each one who treats the disease feel that he is a part of a campaign of disease reduction and that some one cares. So far as such a thing is possible, efforts should be made to carry out an educational campaign among those who treat the disease. In this way interest will be stimulated and better work will result. Also, there would be built up a degree of sanity regarding the disease and its treatment that would reduce to a minimum the dangers of the exploitation of treatment methods that have little or nothing to offer. Such things retard advancement and often work to the harm of thousands of patients.

Venereal Disease Control Program in Kansas

In accordance with state laws, syphilis and gonorrhae were made notifiable diseases at the quarterly meeting of the Kansas State Board of Health in January, 1914. Earle G. Brown, Topeka, Kan., discusses the effect of the program on the incidence of venereal disease and summarizes its work from 1914 to 1935 in order that comparison may be made with the proposed program of the future. As a result of funds allotted to the Kansas State Board of Health by the United States Public Health Service under the provisions of the Social Security Act, a program is in process of development with a full-time director in charge. Dr. Wenger, following his trip to Kansas, made the following recommendations: 1. Free serologic service to all physicians by increasing the laboratory staff. 2. The addition of medical and social personnel at the three clinics; also additional equipment if needed. 3. Free neoarsphenamine and heavy metals to physicians for indigent patients. 4. Standard medical record for use in all three clinics. 5. The use of the U. S. Public Health Service classification for syphilis in all clinics to assure better material for study. 6. That an educational program for physicians be started so that they will report their venereal disease cases. 7. When more full-time health units are established throughout the state, that the venereal disease program be included. Thus the new venereal disease program is under way. There is a renewed interest in the problem of syphilis and gonorrhea, not only among professional groups but among lay groups. Within the past month each of the two newspapers in Topeka printed articles in regard to venereal disease, as compared with the previous custom of referring to them as "social diseases." It is hoped that additional treatment facilities may be provided through the development of full-time county or district health departments. There are certain areas in the state where it is considered that this would be especially advantageous.

New York State Program for Syphilis Control

In this progress report on the New York State spyhilis control program, Edward S. Godfrey, Jr., Albany, N. Y., places emphasis on notification and the provisions of adequate diagnostic and treatment facilities. These two phases of the program must be developed first, together with facilities for returning delinquent infectious cases to treatment. By assisting the localities in which syphilis is most prevalent, namely, large cities, and by augmenting district staffs, it is hoped to raise the quality of treatment and to provide really adequate follow-up service. As time goes on it is believed that the problem will become less complex and that case and contact investigation can be more generally and effectively carried on. As has been said on other occasions, syphilis control presents a real challenge to physicians.

Typical City Program for Combating Syphilis and Gonorrhea

Charles Walter Clarke, New York, asserts that while the details of a modern program for com-

bating syphilis and gonorrhea will differ from city to city in accordance with the size and character of the population of each, the principles involved in the program of each should be identical, since these principles are based on accepted scientific facts. Neither educational activities nor chemical or mechanical prophylaxis have so far succeeded in reducing radically the prevalence of syphilis or gonorrhea in civilian groups, and unfortunately gonorrhea cannot be rendered noninfectious quickly and permanently by the means of treatment now generally available. This is not to say, however, that education, prophylaxis and therapy may not under favorable future conditions be effective in reducing the prevalence of gonorrhea. Syphilis, on the other hand, can be rendered temporarily noninfectious usually with a few doses of arsphenamine, and by persistent treatment almost every patient becomes and remains noninfectious. Unlike gonorrhea, second infections with syphilis are so extremely rare as not to constitute a public health problem. If every patient with early syphilis received twenty doses of arsphenamine and forty doses of a bismuth or mercury compound properly administered, and if every syphilitic woman were treated adequately in every pregnancy, acquired and congenital syphilis would soon cease to exist. While greatest emphasis should be placed on early syphilis and on syphilis as a complication of pregnancy, almost every case of syphilis that has not been adequately treated should still be regarded as being potentially infectious. With these principles in mind, the modern city program should be built up in three main divisions: (1) education, (2) case finding and (3) treatment. The necessary staff for carrying out the program for combating syphilis and gonorrhea in a city consists of an experienced and a well trained medical director assisted by physicians, nurses and clerical staff, and in larger cities by social workers, technicians, orderlies and statisticians. All members of the staff should be reasonably compensated. This, of course, includes the physicians working in the health department clinics. Voluntary service is usually unsatisfactory in one respect or another. The physicians and nurses should be specially trained or should at least be directed by specially trained supervisors. The fact should not be overlooked that local voluntary agencies such as social hygiene societies can be of great practical assistance in many aspects of this program, especially with regard to popular education, professional training and the creation of favorable public opinion.

THE MOONSTRUCK GOLFER

("The moon would be a paradise for golfers because the average golfer would be able to drive for a mile or more on its surface."—*The Astronomer Royal.*)

How nice it would be to play golf on the moon
  Where gravity hinders so slightly
That the ball bounds away like a giddy balloon
  And soars over bunkers most brightly.
There even the duffer could get a good drive
  And without any great preparation
Could slog from the tee to the next green but five—
  Which must be a splendid sensation.
And another advantage—if gravity there
  Increases the scope of exertion,
Just think of the clubs that a caddie could bear,
  In the course of a lunar excursion!
Fourteen as a limit, a niggardly boon,
  Is mentioned in Scotland the thrifty—
But it's O to play golf with the Man in the Moon
  Where the caddie could lug around fifty!

—*The Manchester Guardian.*

CURRENT EDITORIAL OPINION

For Whose Benefit?

(Journal of the American Medical Association)

Every proposal for change in medicine should be tested with the question "For whose benefit?" Unless the change will help, either directly or indirectly, in the fight against disease and death, it cannot be justified. The fact that it may increase the income of physicians, help pay the interest on hospital investment, or provide salaries for a body of administrators, unless it will also improve medical service, is no justification. This is a simple test, but applied strictly to many of the proposals for medical changes before the public at the present time it would elicit a verdict of condemnation.

How Many Need Help?

(Journal of the American Medical Association)

Within a small margin of error, about 50 per cent of the population goes through the year without any illness. Fifty per cent of the illnesses of the other half are not disabling. One half of the remainder, or about 12½ per cent, are of a minor character, such as the common cold, and involve a disability of less than a week. This leaves about 12½ per cent who have serious illness and an expense for wage loss and for medical care sufficient to constitute a real problem. Of these, many are able to meet the necessary expense from their own savings, by deferred payments or from regular income, just as they meet other extraordinary expenses. Thus it seems reasonable to assume that 5 per cent—certainly less than 10 per cent—of the total population are unable to meet their sickness expense without great sacrifice. This is still enough of a problem always deeply to concern organized medicine.

It is a testimony to the accuracy of these figures that when county medical societies have set up machinery to provide medical service for those otherwise unable to obtain it the number served has almost invariably been between 3 and 5 per cent of the total population.

Traffic Manners

(*Journal of the Indiana State Medical Association*)

Editor Dempster, of the *Journal of the Michigan State Medical Society,* in the February number strikes at the very heart of the subject of prevention of automobile accidents when he says that "the greatest single factor in the promotion of safety on the streets is courtesy or good manners. If drivers and pedestrians were as courteous on the streets as, let us hope, they are in their own homes, there would be very few casualties in comparison to the number in the past few weeks. It seems that the automobile has brought to the surface all the bad manners of which some persons are capable. Consideration for the other fellow and strict adherence to traffic signals, safety zones and other street signs, on the part of the pedestrian and driver, will accomplish more than any expensive program of survey and street widening that can be devised. Let's use common sense!"

To our notion, the above quotation includes about everything that needs to be said on the subject; it hits at the crux of the matter and if both drivers and pedestrians would hearken unto it, automotive accidents would become materially lessened.

That the disasters are ever on the increase and

that this increase will continue so long as the present conditions exist, cannot be denied. Civic and state police seem at their wits' end in their efforts to stem the rising tide of these accidents; city councils and state legislatures find themselves unable to pass laws fast enough to meet the ever-increasing number of such accidents. Our home city but a short time ago enacted what was said to be a model traffic ordinance; a perusal of it seemed to convince the most doubting of Thomases that here, indeed, was the final solution to the traffic problem in a city that held the darkest record of any city of comparable size in the nation.

Today we find the city attorney busily engaged in the drafting of a *real* traffic ordinance; it seems that the former one did not pan out, since we still hold the unenviable record among cities of our class. Most traffic ordinances of the past have been directed toward control of automotive traffic, a United States Supreme Court decision having held that the pedestrian had the right-of-way over the gas-propelled vehicles. Now, it seems, the worm has turned and it is the lowly pedestrian who is to feel the weight of the law. Jay-walking, that bane of city police, is being legally attacked in many cities; the chap who is wont to "cut catty-cornered" across the streets, is to be regarded as a menace as well he should be.

Walking across street intersections "against the light" is to be taboo. In other words, traffic is to be directed according to signal lights, where such are available.

But all these measures will not take care of the thoughtless, the ill-bred, that man who does not care; the police department will continue to have to face that person and that person will have to be taught the rights of others.

Finally, the police, as well as the courts, will have to crack down on all offenders, be they drivers or pedestrians. Further, motor laws will have to be more universal in character than at present.

Gynecologic Aspect of Human Sterility

Samuel R. Meaker, Boston, (*Journal A. M. A.*, Dec. 5, 1936) reduces the diagnosis and treatment of sterility to three fundamental principles. 1. In the great majority of cases of human infertility the cause of that defect is not some single abnormality but rather the summation or totality of several factors. A single abnormal condition may render sterile an individual and consequently any mating into which that individual may enter: this would be true of a blockade in the genital passages, for example, or of any complete impediment to the production of normal gametes. But absolute sterility is found in only about 30 per cent of clinical cases. Seventy per cent of couples who apply for the relief of childlessness show no single condition that would account for their difficulty. They do show, without exception, a group of causative factors of which each one lowers their fertility to some extent and of which the sum total depresses that fertility below the threshold of conception. 2. The multiple factors are partly genital and partly constitutional. The general or constitutional condition is fully as important as the local or genital condition. States of constitutional depression include not only endocrine insufficiencies but also various nonendocrine conditions such as chronic intoxication, metabolic disturbances of extrinsic origin, debility and general inferiority. 3. The several factors present in each case are seldom limited to one partner. The author and his associates find that, among the couples who consult them, only about 10 per cent of the husbands and 5 per cent of the wives are free from all objectively demonstrable evidence of infertility. The complex nature of human infertility requires an elaborate diagnostic approach. The urologist and the gynecologist must make detailed studies of the genital organs; no less important are the services of the internist and the endocrinologist. Complete investigation of every case is necessary in order to obtain the best results; for there could be no worse fallacy than to accept the first discovered abnormality as the sole and only cause in the case under consideration, on an unjustifiable assumption that no other causative factor is present. In the past, unfortunately, this illogical procedure has been the rule. Rarities being excluded, the four important groups of gynecologic factors of infertility are female genital hypoplasia, abnormal viscosity of the endocervical secretions, partial or complete obstruction of the fallopian tubes and deficient oogenesis. Treatment is clearly indicated by a complete diagnostic study. In general, one should aim to correct all the factors demonstrated as inimical to fertility. It is essential to assure an adequate grade of male fertility before subjecting a wife to any therapeutic measures directed primarily against sterility.

THE SENIORS*

We've lived oor years sae gay, wi' cant,
We've filled oor hours wi' joy an' mirth,
Our riotous years were nae sae scant,
An' diels an' demons filled oor birth.
An' aftentimes oor heid was sair,
An' dancin' fairy tunes, were real,
An' Tom an' Bill an' mony mair
Were devil fu', frae heid tae heel.

Bit in th' sundoon o' oor lives,
Wi' "lean an' slippered" panteloons
An' creaky bones that noo arrives,
We're mair sublime, an' richness blooms.
In faces, lonely, troubled, sair,
We see a touch o' human kin',
An' find that there are wrinkles there
Where ance we cudna see a line.

Noo we're staid an' truly Seniors
Wi' tempers smooth, nae uproarious,
We love tae sit amang oor cronies
An' crack th' jokes, ance sae glorious,
We like the veesit freen' wi freen'
Frae 'wa back there in auld lang syne,
An' tell about th' case we'd seen
In days of mercury an' quinine.

Then, lights were unknown folderol,
An' one nicht cures for colds we had
In colocynth an' calomel
An' ginger tea an' mustard bath.
We then were free frae vitamines
An' curious quirks o' allergy,
O Lord, cud we bring back thae times
For just ane nicht sae happily.

Bit noo we've passed th' three an' ten,
They tell us that we're failin' noo,
An' that we're wanderin' doon th' hill
An' that oor cronies whom we knew
That's gone awa just recently
Wull no be lonesome verra lang,
For veesits gay an' pleasantly
We'll hae, when we've joined oop wi' them.

*The "Seniors" constitute a group of physicians in the Wayne County Medical Society who have practiced over a quarter of a century. They meet at noon luncheon once a month when, following the luncheon, a program is provided usually on some non-medical subject. The above poem was written for one occasion by Dr. William Fowler, better known as "Weelum."

President's Page

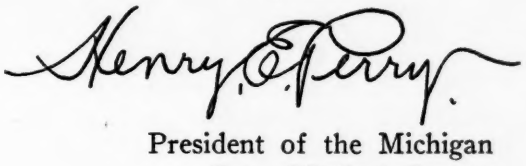
MEDICAL PHASES OF WELFARE AND RELIEF LEGISLATION

SINCE 1933, FERA Bulletin No. 7 has acted as a general guide for administration of medical care to welfare recipients. With the 1937 Legislature come recommendations from several sources for changes in the relief and welfare organization of the state and counties. A number of bills on this subject have the endorsement of the Governor's Study Commission. The important *medical phases* of welfare and relief were merely touched upon in Senate Bill 111, but were not sufficiently outlined to insure to the welfare patient the necessary medical service he may require. This was a serious omission and one which was immediately recognized by practical administrators of welfare and relief work.

The allied health group of physicians, dentists, nurses, pharmacists, and funeral directors of the state has respectfully requested several amendments in the Senate proposal to correct these inadequacies in the original draft. Important is the recommendation for a medical department supervised by a properly qualified, licensed doctor of medicine; this department should administer medical care which would include home and office care, dental service, pharmaceutical service, bedside nursing service in the home, and funeral and burial service. All qualified practitioners should be included in the list of those furnishing any health service, and every person entitled to health service should have the right to select, insofar as practicable, the practitioner of his choice. Each county should have an Advisory Committee of professional people, which practice has proven of great value to the ERA medical program during the last four years.

These medical amendments to the welfare and relief bills are important and desirable additions. They protect the health and welfare of a percentage (be it large or small) of every practitioner's clientele.

Write your legislator today, urging that he give serious consideration to the medical phases of welfare and relief when he is studying S.B. 111. He is looking for this support from you to justify his vote.



President of the Michigan
State Medical Society

DELINQUENT ACCOUNTS

HENRY C. BLACK and ALLISON E. SKAGGS

WHAT is a delinquent account? Obviously this question is not easily answered as it applies to medical accounts, because it depends upon the *normal expectancy of payment* and thus varies with the individual arrangements. The time when the creditor expects payment of an account has a very definite relation to his collections because people pay their bills largely by habit.

For instance, the man who habitually pays all his bills each month will do so without much invitation and never becomes a problem in delinquency. Then there is the man, representing by far the largest group, who pays certain bills such as telephone, light, car payments, etc., promptly because he has formed the habit, but who never pays quite all his bills at one time. The bills he pays in full every single month are invariably those firms which have so continually impressed him with the fact that they *expect* payment promptly, that he has almost unconsciously formed the habit of paying them as expected. Since this group usually furnishes the doctor a substantial part of his income it is important to help them form good paying habits, and as many of these are "good as gold," "perfectly honest," "best patients," etc., this must be done with a certain finesse or not at all.

The wide variance of collection percentages among doctors shows that some members of the medical profession have been successful in building up these paying habits. It can be done and the first step begins with the early contacts with the patient in the office. If the attitude of the doctor and his assistant indicates that "of course" prompt payment is expected, and emphasizes the value of the service, there is far less possibility of delinquency. Next in importance is the sending out of statements promptly and regularly, but this has already been amplified in a previous article.

Then if payment has not been made after three or four statements have been sent, there is something wrong and the sooner it is discovered and corrected the better the ultimate result will be. Possibly the bill has just been neglected, or unusual expenses have made it difficult to pay. On the other hand, perhaps there has been a misunderstanding regarding the treatment and the sooner the patient is contacted the more easily the difficulty may be straightened out without unpleasantness.

Personal correspondence is a courteous and dignified method of following up statements which have been disregarded. When a patient responds giving reasons why the bill cannot be paid it should be acknowledged, and in the same manner when he fails to keep the promise to pay he should be sent an immediate reminder. By such a logical routine over a period of months and years patients can be helped to form the habit of paying doctor bills just as promptly as any others, and delinquent accounts may be largely avoided.

If several efforts to collect the account by correspondence fail to bring even a response the account should be given to a local, dependable collection agency bonded by the state, not only to collect, if possible, the small amount which might be obtained but also to make it more difficult for the patient to run up a bill somewhere else that he does not intend to pay.

Deserving patients should be given consideration but those who ignore statements, letters, and all reasonable attempts to collect the account are capitalizing on the generosity and public spiritedness of the doctor, who undoubtedly gives away more of his time and money than anyone in the community.

DEPARTMENT OF SOCIETY ACTIVITY

L. FERNALD FOSTER, M.D., Secretary

Council Chairman's - - - Communication

THROUGH MEDICAL CHANNELS

THE old adage in the Army is that all orders or communications must go "Through Military Channels."

A few physicians are not stopping to think that in matters affecting the entire medical profession, their actions should go "through medical channels." Some take direct personal action on medical subjects of general interest without asking the advice of their county society or their state medical association. This independent activity is ofttimes embarrassing to the State Society and our parent organization, the American Medical Association.

Here is an illustration: With most praiseworthy motives, one large pharmaceutical house has been trying to arouse the medical profession by offering a certain amount of money, and urging contributions of other drug houses, to be given to the American Medical Association without any strings attached, for radio talks to inform the general public on Medicine.

I quote a paragraph from a recent letter from this drug firm: "There can be no doubt that the proposal has been received favorably by the medical profession. The next step will be to obtain necessary contributions from other pharmaceutical houses. It might be a little difficult for me, in my position, to achieve this purpose—I believe it quite possible for individual physicians and medical societies to accomplish the desired result much better."

Shall we become beggars and demand this money of the drug firms with which we deal, to tell the world about ourselves?

We are now accepting paid advertising in our State Medical JOURNAL and the *Journal of the American Medical Association* and also support at our conventions, from many ethical and Council approved houses. Is this not asking enough?

Physicians can reciprocate by supporting these ethical firms. Read their messages in your Michigan JOURNAL; stop in their booths at our Annual Exhibition.

Another thing, please do not sign return postal cards for samples without first finding out whether the drugs are Council approved. Such solicitation embarrasses the American Medical Association as non-accepted firms enjoy saying that many doctors are using their drugs!

A good rule to remember is: obtain your information through proper medical channels, via County Society to State Medical Society to American Medical Association. This will save many embarrassing situations and in the end will be better for organized medicine.

You know that your State Medical Society and the American Medical Association are willing to do anything which will help the Medical Profession—and You.

P. R. URMSTON, M.D.,
Chairman of The Council, M.S.M.S.

BE PREPARED

EVERY effort is being put forth to acquaint the membership of the Michigan State Medical Society of the activities of the various special committees. Among these may be mentioned the Cancer Committee, the Committee for Syphilis Control, Tuberculosis, Mental Hygiene and Maternal Health.

In view of the fact that the laity are becoming immensely interested in public and personal health measures the profession should seize the opportunity to increase and direct this interest intelligently. The work being accomplished by these various committees has been publicized and commented upon from time to time. By radio, by the lay press as well as by addresses before lay organizations, men and women in all walks of life are learning that the various pathologic conditions considered by the

special committees here listed are preventable or curable, if physicians are consulted during the very early stages. It behooves the members of the medical profession to be prepared, when consulted, with the indicated care or advice. If the malady for which the physician is consulted is not within the scope of his practice, he should not feel that he has discharged his obligation to the patient until he sees that the patient is in competent hands.

The postgraduate courses to be given during the next few months as well as prepared booklets on various subjects will afford ample opportunity to qualify. The crusade against preventable disease will not be a matter of weeks or months, it will affect the entire future of medicine. The watchword is "Be Prepared."

COUNCIL AND COMMITTEE MEETINGS

1. *February 28, 1937*—Legislative Committee—Olds Hotel, Lansing—12:00 Noon.
2. *March 3, 1937*—Advisory Committee on Occupational Diseases—Olds Hotel, Lansing—2:00 P. M.
3. *March 9, 1937*—Special Committee on Fee Schedules A, B, C, D, with Finance Committee of State Administrative Board, Lansing—2:30 P. M.
4. *March 17, 1937*—Executive Committee of The Council—City Club, Lansing—3:00 P. M.
5. *March 17, 1937*—Committee on Scientific Work—City Club, Lansing—6:30 P. M.

MINUTES OF MEETING OF LEGISLATIVE COMMITTEE

February 28, 1937

1. *Roll Call.*—The meeting was called to order by Dr. L. G. Christian, Chairman, at 12:35 p. m. in the Olds Hotel, Lansing. Present were: Dr. L. G. Christian, Lansing; Dr. J. B. Bradley, Eaton Rapids; Dr. Wm. E. E. Tyson, Detroit; Dr. P. A. Riley, Jackson; Dr. J. W. Hawkins, Detroit; Dr. Leo Bartemeier, Detroit; Dr. P. R. Urmston, Bay City. Also present were Dr. Henry E. Perry, Newberry, President of the Michigan State Medical Society; Dr. L. Fernald Foster, Bay City; Dr. T. K. Gruber, Eloise; Dr. C. K. Valade, Detroit; Dr. L. M. Snyder, Lansing, and Executive Secretary Wm. J. Burns. Absent: Dr. Wm. A. Hyland, Grand Rapids; Dr. Henry Cook, Flint.

2. *Minutes.*—The minutes of the meeting of February 18 were read and approved.

3. *Basic Science Bill.*—This bill will be introduced early in March (March 4, 1937).

A letter from the Secretary of the Legislation Committee of the Washington State Osteopathic Association, favoring Basic Science, was read.

4. *Relief and Welfare.*—Report was given on meeting of February 24 in Lansing, and Dr. Urmston gave a report on meeting with the social workers in Detroit on the same day. Mr. Fred Levi is to see Dr. Tuck of Pontiac relative to the Oakland County Plan.

5. *Occupational Diseases.*—A letter from Dr. Earl G. Krieg of the Governor's Study Commission was read. The subject was referred to the Advisory Committee on Occupational Diseases. PRESIDENT PERRY PLACED DR. EARL G. KRIEG ON THE ADVISORY COMMITTEE ON OCCUPATIONAL DISEASES.

6. *Legislative Conference of March 10.*—The program of this conference was discussed, and approved.

7. *Medical Examiner Act.*—Dr. Snyder explained the proposed Medical Examiner Act., which may be introduced into the 1937 Legislature.

8. *Adjournment.*—The meeting was adjourned at 3:20 p. m., with the Chairman thanking all for their attendance and good advice.

MINUTES OF MEETING OF PUBLIC RELATIONS COMMITTEE

February 7, 1937

1. *Roll Call.*—The meeting was called to order by Dr. L. Fernald Foster, Chairman, in the East Room of the Hotel Olds, Lansing, at 4:20 p. m. Those present included: Drs. Foster, Bay City; F. T. Andrews, Kalamazoo; C. R. Dengler, Jackson; A. G. Sheets, Eaton Rapids; L. E. Holly, Muskegon; W. S. Reveno, Detroit; F. B. Miner, Flint; A. V. Wenger, Grand Rapids; and Harold Morris, Detroit. Also present were: President Henry E. Perry, Newberry; Drs. Henry Cook, Flint; L. G. Christian, Lansing; P. R. Urmston, Bay City; A. S. Brunk, Detroit; I. W. Greene, Owosso; J. Earl McIntyre, Lansing; L. W. Shaffer, Detroit; A. L. Ziliak, Bay City; L. J. Johnson, Ann Arbor; L. O. Geib, Detroit; H. W. Porter, Jackson; J. S. DeTar, Milan; R. C. Perkins, Bay City, and Dr. W. W. Bauer, Director Bureau of Health and Public Instruction, A.M.A.; and Executive Secretary Wm. J. Burns. Absent: Dr. W. H. Alexander, Iron Mountain.

2. *Minutes.*—The minutes of the meeting of December 6, 1936, were approved as published, motion of Drs. Andrews-Reveno and carried unanimously.

3. *Approval of Medical Service Plan.*—Dr. Cook suggested that physicians who are invited to participate in medical service plans should present same to their county medical societies for approval before accepting same. Dr. W. W. Bauer of the A.M.A. discussed the problem, referring to the A.M.A. House of Delegates resolutions of the 1935 special session, plus the ten points. Dr. Reveno suggested that the item be placed in the Secretary's Letter going to all members of the M.S.M.S., and that same also be incorporated in the Wayne County Medical Society's President's Letter. Motion of Drs. Andrews-Holly that a letter be sent to the County Secretaries publicizing this matter and requesting that, in accordance with the resolutions passed by the American Medical Association in 1935 and with the resolutions adopted by several county medical societies in Michigan, a resolution be passed by all county medical societies to oppose any such plan that might be instituted by any individual or group other than the County Medical Society; and that this subject be made a project of the Public Relations Committee of the M.S.M.S. Motion carried unanimously.

4. *Reports of P.R.C. Members.*—The various members of the P.R.C. gave reports on integration

activities, appearances before county medical societies, and the condition of the Filter System throughout their counties. The Chair urged that each member of the P.R.C. drop in on their county medical societies and give them information on the activities of the State Society at every opportunity.

Dr. Foster explained the importance of integrating the teaching of sex hygiene to school children by physicians, following the Ingham County Medical Society plan, as recommended by the M.S.M.S. House of Delegates at its 1936 session; he also stressed the importance of integrating the Cancer program through all county medical societies, as per the request of the M.S.M.S. Cancer Committee.

Dr. Foster stated that all projects to be integrated by the P.R.C. members will be listed and sent to the members of the committee.

5. *Michigan's Syphilis Control Program.*—This matter was discussed by Dr. L. W. Shaffer, and the committee in general. Dr. Bauer referred to the reprints from the A.M.A. Journal relative to syphilis, and a motion was made by Drs. Andrews-Sheets that a copy of this reprint be sent to each member of the P.R.C. Carried unanimously.

Dr. Shaffer spoke of the need for a manual on syphilis treatment. Motion of Drs. Miner-Holly that it be recommended to the Executive Committee of The Council of the M.S.M.S. that the Syphilis Control Committee be authorized to prepare a manual on the treatment of syphilis. Carried unanimously.

Motion of Drs. Sheets-Miner that the P.R.C. endorse "The Venereal Disease Control Program for Michigan," as attached hereto, and refer same to the Executive Committee of The Council. Carried unanimously. Dr. Perry reported on his contact with Dr. Slemons relative to the venereal disease control program for Michigan, stating that Dr. Slemons was in accord with this plan.

6. *National Campaign of Medical Publicity.*—Upon request, Dr. Bauer discussed the various recommendations relative to a national campaign of medical publicity. The whole matter is now in a formative stage, and must be decided by the House of Delegates of the A.M.A.

7. *Speakers.*—Dr. Foster spoke about procuring medical speakers to address lay groups (through the Joint Committee on Health Education), said medical speakers then being available on the same date to address the county medical society in the evening. County medical societies may procure these speakers by writing the Executive Office of the M.S.M.S., 2020 Olds Tower, Lansing.

8. *Radio Talks.*—The radio talks of the Radio Committee of the M.S.M.S. were approved, on motion of Drs. Wenger-Andrews, and carried unanimously.

9. *Woman's Auxiliary.*—Motion of Drs. Reveno-Dengler that it be recommended that directory of the Woman's Auxiliary be developed, a copy of same to be kept in the Executive Office, said directory listing the positions held by the women in local and state clubs and organizations. Carried unanimously.

10. *Medical Leadership.*—The committee discussed with Dr. Bauer the necessary stimulation of State and county medical societies to action at this critical time, especially in urging physicians to speak before lay groups, and to develop speaking manuals for their use.

11. *Adjournment.*—The meeting was adjourned at 6:35 p. m.

MINUTES OF MEETING OF MATERNAL HEALTH COMMITTEE

February 17, 1937

The luncheon meeting was held in the University Hospital, Ann Arbor. Dr. A. C. Furstenburg, Dean of the Medical School; Dr. Harley Haynes, Director of the University Hospital and Professor Stason of the University of Michigan legal faculty met with the committee. All the members of the committee were in attendance as well as Dr. C. E. Palmer who is conducting the obstetrical survey.

During luncheon the facts relative to the lack of clinical material for teaching purposes in the University Hospital was discussed. The chairman of the committee had been instructed to contact the Dean of the Medical School at the last meeting. Means of rectifying the lack of obstetrical teaching material were suggested and discussed at great length. The committee will present to the Executive Committee of the Michigan State Medical Society suggested plans. All present were agreed that whatever means was taken to rectify this situation should be with the approval of the medical profession of Michigan.

Dr. Palmer reported that delivery charts were not coming in since our last meeting. At the present time 9,500 forms have been returned. The committee feels that 10,000 forms will make a very satisfactory basis for study. Forms received after March 16th will not be included in the study.

Communication was read by Dr. Campbell from the Federation of Women's Clubs of Michigan expressing a willingness to coöperate in any educational program the committee might promote among club members.

A letter was read from the office of Dr. Fred Adair of the Chicago Lying-in Hospital on the definition of Prematurity.

In the absence of Dr. Campbell, Dr. Miller was appointed to act as chairman of the committee.

The question of standardization of methods of reporting still-births to be reported by Dr. Furlong at the next meeting.

Meeting adjourned to meet at the call of Dr. Miller.

HAROLD A. FURLONG, M.D.
Acting Secretary.

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE OF THE COUNCIL

February 18, 1937

1. *Roll Call.*—The meeting was called to order by Dr. P. R. Urmston, Chairman, at 3:15 p. m. at the Owosso City Club, Owosso, Michigan. Those present included Dr. P. R. Urmston, Bay City; Dr. A. S. Brunk, Detroit; Dr. H. R. Carstens, Detroit; Dr. I. W. Greene, Owosso; Dr. F. E. Reeder, Flint. Also present were Dr. Henry E. Perry, President, M.S.M.S., of Newberry; Dr. L. Fernald Foster, Bay City; Dr. H. H. Cummings, Ann Arbor; Dr. Henry Cook, Flint; Dr. L. G. Christian, Lansing; Dr. James H. Dempster, Detroit; Dr. F. T. Andrews, Kalamazoo, and Executive Secretary Wm. J. Burns. Absent: Dr. T. F. Heavenrich, Pt. Huron (ill).

2. *Minutes.*—The minutes of the Third Session of The Council meeting of January 21, 1937, were read; correction was made in Item 45; and the minutes were approved as corrected, on motion of Drs. Carstens-Reeder. Carried unanimously.

3. *Financial Report.*—The monthly report on the financial status of the Michigan State Medical Society of THE JOURNAL were presented, approved,

and ordered placed on file. Bills payable for the months were presented, and ordered paid, on motion of Drs. Greene-Reeder. Carried unanimously.

4. *Report on Secretaries' Conference.*—Dr. Foster reported on the successful Secretaries' Conference of February 7, 1937. The attendance of ninety-seven physicians included forty county society secretaries. The Council felt that increased activity in the county medical societies throughout the State would result from this important meeting.

5. *Legislative Activity.*—Dr. Perry reported on this matter, and mentioned that the Legislative Committee would meet in Owosso this day, at a later hour.

6. *Syphilis Control Program.*—Secretary Foster presented the Syphilis Control Program for Michigan, as developed by the Committee on Syphilis Control. This plan was approved, on motion of Drs. Carstens-Brunk. Carried unanimously. The program is to be presented to Surgeon-General Thomas Parran, by and with the coöperation of Health Commissioner Slemons.

It was reported that a representative of Dr. Parran would be sent to Michigan to meet with the Health Commissioner, the Executive Committee of The Council, and other physicians to work out the Michigan Syphilis Control Program. President Perry reported his satisfactory conference with Dr. Slemons relative to this plan.

Manual on Treatment of Syphilis.—This suggestion, made by Chairman Loren W. Shaffer of the Syphilis Control Committee, was discussed by the Executive Committee of The Council. Motion of Drs. Greene-Brunk that the Syphilis Control Committee either prepare or approve a manual for the M.S.M.S. membership. Carried unanimously.

7. *Schedules A, B, C, and D.*—Reports on activity of the Special Committee on Schedules A, B, C and D were presented, in letters from Dr. E. R. Witwer and Dr. Frank H. Purcell.

8. *Medical Coördinator.*—The report of the Preventive Medicine Committee from the Chairman, Dr. L. O. Geib, was presented. Motion of Drs. Brunk-Carstens that this matter be re-referred to the Preventive Medicine Committee for further study and report back to the Executive Committee of The Council. Carried unanimously.

9. *Michigan Health League.*—The proposal of Dr. R. G. Tuck for formation of a Michigan Health League was explained to the Councilors, and request was made that a copy of same be sent to all members of the Executive Committee.

10. *Admission Policy at U. of M. Hospital.*—Dr. Greene of the Committee Studying Admission Policy at U. of M. Hospital reported. The matter was discussed by Dr. Cummings, who was placed on this special committee. The figures sent by the Hospital to Dr. Penberthy were presented to the Executive Committee, which was asked to submit a report, and thereafter publish its findings in THE JOURNAL.

11. *Postgraduate Activity.*—Dr. Cummings reported on the scope and expense of Postgraduate activities in 1937. Motion of Drs. Carstens-Reeder that the sum of $300 be taken from committee reserve and added to the Postgraduate Committee's budget. Carried unanimously. Regarding the four lecturers for Alpena, with expenses to be paid from M.S.M.S. funds: Dr. Foster explained that the Joint Committee on Health Education would pay the expenses of medical lecturers who spoke to lay organizations, and that postgraduate meetings in Alpena might be arranged on the evening of the day the lecturer spoke to some lay organization at noon. Dr. Cummings was asked to contact Alpena with the above in mind, and suggest to the county medical society that it refer all requests for speakers before lay groups, as well as postgraduate lecturers, to Dr. Foster, Secretary.

12. *Approval of Kalamazoo Hospital.* — The Executive Secretary stated that the Crippled Children Commission had approved Borgess Hospital, Kalamazoo, for care of afflicted children, at its February meeting.

13. *Externes for Hospital at Jackson Prison.*—A suggestion from the Preventive Medicine Committee that the M.S.M.S. attempt to supply externes for the hospital of the State Prison of Southern Michigan, Jackson, was presented, by Secretary Foster. Motion of Drs. Carstens-Reeder that the Secretary be requested to contact the Deans of the two Michigan medical schools, recommending approval of the Preventive Medicine Committee's suggestion. Carried unanimously.

14. *Refresher Courses.*—The Executive Secretary reported on his contact with Dr. C. C. Slemons, relative to further refresher courses, and reported that additional courses would be given this year; also on his contact with the Crippled Children Commission, which has inserted $1,000 in its budget for said refresher courses this year.

15. *Resolution on Death of Dr. Fred B. Burke.*—This resolution was approved, on motion of Dr. Reeder, seconded by several, and carried unanimously. A copy of said resolution is to be sent to the family of the late Dr. Burke.

16. *Federal Bureau of Health.*—The Executive Secretary reported on the proposed reorganization of the Federal Government, and that the Health Department would be centered in a "Bureau of Social Welfare." Motion of Drs. Carstens-Brunk that resolutions be sent to the three Federal committees, to the Michigan Congressmen and Senators, urging that in any reorganization, a "Bureau of Health" be organized with a qualified physician in charge thereof, and that these important functions be not placed in a "Bureau of Social Welfare." Carried unanimously.

17. *Resolution Re work of the Crippled Children Commission.*—The Legislative Committee recommended approval of the following resolution:

"WHEREAS, the Michigan Crippled Children Commission has administered the Crippled Child Act (Act No. 236 of 1927 as amended) since this law was placed on the statute books, and the Afflicted Child Law (Act No. 234 of 1913 as amended) since 1933; and

"WHEREAS, the programs for the crippled and afflicted children of Michigan have been conducted by the Michigan Crippled Children Commission in a wise and humanitarian manner, in the best interests of the health and welfare of the crippled and afflicted children of this state, and the Crippled Children Commissioners have served voluntarily and conscientiously during this period; therefore be it

"RESOLVED, that the Michigan State Medical Society endorses the recommendations of the Michigan Welfare and Relief Study Commission with regard to these services: that the administration of the work for crippled and afflicted children be continued under the authority of the Michigan Crippled Children Commission."

The Executive Committee of The Council approved the resolution, on motion of Drs. Brunk-Carstens, and instructed that copies of it be transmitted to the Crippled Children Commission and to the Governor of the State of Michigan.

18. *Adjournment.*—The meeting was adjourned at 6:45 p. m., and the Chair thanked all for their attendance and helpful advice.

SOME MEDICAL OR QUASI-MEDICAL GROUPS

Aero-therapy
Alereos System
Angiopathy
Astral Healing
Auto-Hemic Therapy
Autology
Automatic Electronic Radio Treatment
Auto-Science
Autotherapy
Autothermy

Biochemic System
Biodynamo-Chromatic Therapy
Biologic Blood-Washing
Biopneuma

Chirothesianism
Christos (Blood Washers)
Chromopathy
Chromotherapy
Combinathics
Coueism

Diet Cure
Divine Science
Dowieism

Eclecticism
Electro-Homeopathy
Electronaprotherapy
Electronic Therapy
Electrono-Chrome Therapy
Emmanuel Movement
Erosionism

Geotherapy

Herbalism
Histolotherapy

Iridotherapy

Kneipp Cure

Leonic Healers
Limpio Comerology

Magnetic Massage
Magnetism

Naprapathy
Naturopathy
Naturology
Nervauric Therapeutics
New Thought

Orificialtherapy

Pathiatry
Patho-Oscillography
Parkinism
Phrenopathy
Pneumatotherapy
Poropathy
Practotherapy
Prana-Yama
Psychic Sarcology

Radio Vibratory Diagnosis Treatment
Rawsonism
Reflectoclasty

Sanatology
Sanipractic
Somnopathy
Spatial Harmonics
Spectrochrome Therapy
Spectrocromists
Spiritual Science
Spondylotherapy

Telatheramy
Theophonism
Thompsonism
Therapeutic Sarcognomy
Tropotherapy

Vibriotherapy
Vita-o-pathy

Zodiactherapy
Zoism
Zonetherapy

The above list does not include those medical groups which are licensed by the State of Michigan and have boards of registration.

A Wise Investment

Detroit undertakes to eradicate tuberculosis. The Council votes unanimously to appropriate required funds to begin a five-year campaign. That may prove an epoch-making act.

Dr. Henry F. Vaughan, commissioner of health, estimates the cost at a million dollars, but says that the saving when the work is accomplished will be more than $1,000,000 a year in hospital costs.

A million dollars is a tidy sum and worth saving. And of course, if getting rid of tuberculosis cuts hospital costs $1,000,000 there will be correlative savings of several times as much that could be estimated pretty accurately in dollars.

But what will it mean to the people of Detroit to be freed from the fear, the dread, the blight that such a disease imposes! What estimate can be put on the lives that will be saved, the homes that no longer will be endangered, the human relationships that no longer will be threatened!

If skill and official service effective in freeing Detroit from tuberculosis is purchasable, any needed investment is justified.—*The Detroit News.*

Where the Lilacs Bloom

It is reported in Los Angeles that lilac bushes grow forty feet high. I don't think we would care to live in a country where they lilac that.—*People's Weekly.*

COUNTY SOCIETIES

CALHOUN COUNTY

WILFRID HAUGHEY, *Secretary*

The March meeting of the Calhoun County Medical Society was called to order at the Athelstan club at 8 p. m. Tuesday, March 2, 1937, by President Brainard.

The minutes of the last meeting were approved as printed in the *Bulletin.*

The secretary read a communication from the state society regarding Basic Science laws, group hospital association laws and the recent meeting of the county secretaries' association, the work of the Public Relations Committee, and the Preventive Medicine Committee.

Dr. Kenneth Lowe reported for the Radio Committee. The programs are being given and will continue to a total of about 18. The radio station say they would be glad to give us the time on account of the nature of the program, but cannot. However, Dr. Lowe suggested a dollar contribution from each one would take care of the whole matter which is a favorable rate when you consider their charge is $25.00 for 15 minutes. A similar arrangement can be made for next year.

Dr. Geo. W. Slagle was asked to introduce the speaker. Dr. Slagle did so, stating that this research was the result of a grant from Mr. Kettering of General Motors.

Dr. H. Worley Kendell of Miami Valley Hospital, Dayton, Ohio, showed four reels of films, giving the history and development of Heat Therapy, demonstrating treatments and showing patients before and after. This treatment has been found to be of value not only in post-syphilitic disease, but in earlier stages, also in G. C. acure, chronic, rheumatic and ophthalmic. Other Corneal lesions also respond. Sdenhan's Chorea responds beautifully as shown by movies of four patients.

There were also about twenty-five slides. It was an interesting subject—completely covered.

The meeting adjourned. Attendance at dinner, forty-three, at meeting, sixty-two.

EATON COUNTY

THOMAS WILENSKY, M.D., *Secretary*

The Eaton County Medical Society held its regular February meeting at the Carnes Tavern, Charlotte, on the evening of the 25th. Immediately following dinner, the speaker, Dr. C. W. Bradford, Lansing neuro-psychiatrist, was introduced by Dr. L. G. Sevener.

The "Neuroses and Psychoneuroses" was the subject of Dr. Bradford's informal talk. He traced the developments of psychiatry and the gradual accumulation of information relative to the strange and baffling complaints of those sufferers who are only too casually, oftentimes, labelled neurotics and so disposed of. Dr. Bradford thoroughly discussed the subjects neurasthenia, psychasthenia and hysteria. In addition, he talked briefly about many of the commonly encountered neuroses, phobias and compulsions which enter so intimately into the daily life and habits of most individuals.

Following this enthusiastically received talk, a business meeting was held at which Dr. E. Imthun of Grand Ledge was elected to membership in the

society. The March meeting will be held together with the veterinaries of this and neighboring counties and it is planned to have a speaker who will correlate the two professional branches to the interest and instruction of both.

GENESEE COUNTY

C. W. COLWELL, M.D., *Secretary*

The Genesee County Medical Society met at the Dresden Hotel on January 26, 1937, at 8:30 p. m.

The meeting was called to order by the president, Dr. Alvin Thompson. Minutes of the last meeting were read and approved.

Dr. Probert reported for the Preventive Medicine Committee and asked for volunteers to do the free immunization in schools and stated that those willing to do this work should notify Dr. Olson at once. Dr. Probert also read a proposed recommendation from the Board of Education concerning the routine examination of teachers for next year.

Dr. Brasie spoke briefly for the Medical Economics Committee concerning the plan which they are working on relative to physicians' pay for hospital staff patients.

Dr. Malfroid read his report on the Maternal and Child Welfare Committee and moved that it be adopted. Seconded by Dr. Burnell. After considerable discussion it was moved by Dr. Streat that the motion be tabled. Motion to table was voted on unfavorably after which the original motion was passed.

Dr. Conover read a proposed amendment to the Constitution which is to be published in *The Bulletin* and voted on at a later date.

The names of five applicants for membership were then voted on favorably as members in the Society, which are as follows, Dr. Ralph R. Shaheen, Dr. Samuel S. Gorne, Dr. Gurden S. Guile, Dr. Eugene C. Smith, Dr. Thos. E. Gibson.

The meeting adjourned.

INGHAM COUNTY

R. J. HIMMELBERGER, M.D., *Secretary*

The regular monthly meeting of the Ingham County Medical Society was held at the Hotel Olds, February 16, 1937. Seventy-six members and three guests were at the dinner.

Following the dinner, President Shaw reversed the usual order of business and introduced Dr. Albert M. Snell of the Mayo Clinic, whose subject was "Some Diagnostic Problems in Liver Disease."

After the speaker of the evening had finished his talk, the business meeting was opened.

The minutes of the last meeting were approved as printed in the *Bulletin*.

Dr. Weinburgh read the budget for the year approved by the Finance Committee.

The Public Relations Committee through its chairman, Dr. Snyder, reported that due to the Occupational Disease bill now in the Legislature there was considerable discussion upon the subject at this time and that there was to be a Conference in May in the City of Detroit upon this question. The Conference is to include the surrounding states and it promises to be an outstanding meeting.

The proposed amendments to the by-laws were read as presented to the Society at the last meeting.

Dr. Shaw called for a vote on the amendments but as there was not a quorum present no vote was taken and the meeting was adjourned.

The regular monthly meeting of the Ingham County Medical Society was held at the Elk's Home on March 16, 1937. A country style chicken dinner was served at 6:30.

Following the dinner the meeting was called to order by the president, Dr. Milton Shaw.

The minutes of the previous meeting were approved as printed in the *Bulletin*. There was no correspondence. The president announced that the Annual Clinic would be held on April 29, at the Hotel Olds.

Dr. Shaw then introduced Dr. Henry E. Perry, president of the Michigan State Medical Society. Dr. Perry, in his short talk, emphasized the importance of writing our Senator and Representatives asking them to give their support on legislative matters, also thanking them for the work they have already done.

Dr. Shaw then introduced "Bill" Burns, executive secretary of the State Society. Mr. Burns suggested our writing personal letters to Mr. Hittle to explain the facts about the Basic Science Bill to him.

Dr. L. G. Christian, chairman of the State Legislative Committee, was called upon; he stated that the Occupational Disease bill and the Welfare and Relief bills were of importance to the medical man. The Occupational Disease bill in its comprehensive form is a menace to medical practice. Dr. Christian thought the bill would be defeated in this form. He also stated that work was being done on the Welfare and Relief bills so that the person concerned would have his own choice of physician, dentist, pharmacist, and undertaker. The social service workers are against these changes, because they are in favor of State Medicine.

Dr. Christian read Representative Brown's editorial on the Basic Science Law, which was very favorable.

The secretary then read the proposed amendments as presented to the Society at the last meeting. Their adoption was moved by Dr. Burhans and seconded by Dr. Meyer.

Dr. L. Snyder stated that he had given the matter some thought and that he wished to make the following revisions in the amendments. His changes when read in whole are as follows:

FINANCE BOARD

The Finance Board shall consist of five persons who have been active members of the Society for not less than seven years. One shall be elected for five years, one for four years, one for three years, one for two years, and one for one year. One member shall thereafter be elected each year for a term of five years. The Board shall annually, after the election, select a chairman.

The Board shall be the custodian of all funds ordinary and extraordinary, belonging to the Society. It shall be responsible for making such investments of funds as to insure a reasonable return to the Society and is authorized to appoint a fiscal agent at reasonable compensation to facilitate the handling of this business.

The Board is responsible for preparing the annual budget and allocating funds to the various departments of the Society.

The Board is responsible for the collection of all funds accruing to the Society. The Finance Board is to pay all bills for administration of the ordinary activities of the Society. Monies are to be disbursed for charitable purposes, advertising or for extraordinary supplies or equipment only with the approval of the Society. The Board shall annually furnish the Society a complete financial accounting of all monies received, monies invested and the profit or loss resulting therefrom and all expenditures ordinary and extraordinary.

THE DUTIES OF THE TREASURER

The treasurer is to be elected for a period of one year and shall have been an active member of the Society for a period of not less than five years. He shall receive such

compensation as shall be appropriated by the Financial Board with the approval of the Society. He shall be required to furnish a bond in the sum of $5,000.00, the premium for such bond to be paid by the Society.

The treasurer is to perform such duties as the Financial Board may designate, to keep a report of all monies received and deposited, and to turn over such monies as are in his possession to the fiscal agent, or other parties, as the Financial Board may direct.

Dr. Snyder moved the adoption of these amendments. Dr. Dunn seconded the motion.

After some discussion, Dr. Snyder's amendments were voted upon and passed.

Since the amendments as read by Dr. Snyder were amendments to the original amendments, Dr. Snyder's amendments are in force.

Dr. Shaw then introduced Dr. Stucky, chairman of the Public Health committee. Dr. Stucky in turn introduced Dr. Breakey, who gave a very comprehensive report on findings of the committee from their recent questionnaire which dealt with a survey of the venereal disease situation in the county.

Dr. McIntyre moved that the Preventive Medicine and Public Health Committee's report on Venereal Disease Control be accepted and further study of the subject material be recommended. Seconded by Dr. Hodges. Motion passed.

Dr. Breakey then introduced Dr. Russell Herrold, Assistant Professor of Urology of the University of Illinois and a member of the Executive Committee of the American Neisserian Society.

Dr. Herrold gave a very interesting and educational talk on "The Criterion of Cure as it Pertains to Venereal Infection."

Following Dr. Herrold's talk there was considerable discussion. There being no further business to come before the society, the meeting adjourned.

IONIA-MONTCALM COUNTY

JOHN J. MCCANN, M.D., *Secretary-Treasurer*

The February meeting of the Ionia-Montcalm Medical Society was held at the Winter Inn, Greenville, Tuesday evening, February 9, 1937.

One of this hostelry's famous Germanic dinners was served to twenty-two members and guests.

Following the dinner Doctor Bower assumed charge of the scientific program, and introduced Dr. H. C. Robinson, of Grand Rapids, who spoke upon "Allergy, and the Allergic Diseases," giving the history of development of our knowledge of the condition, the very large number of diseases now believed to be allergic.

Specifically, as to asthma, Doctor Robinson enumerated the various measures in alleviation and treatment of the disease. The paper was comprehensive, and discussion was general.

Dr. W. F. Bender then introduced Dr. O. H. McConnell (D.D.S.), who gave a concise and practical talk on "Symptoms Caused by Disturbance of the Function of the Temporo-mandibular Joint." He answered pertinent questions by both physicians and dentists.

Business Meeting: Minutes of the January meeting were read, and approved. Communications from the State Secretary and Committee on Economics were read.

The secretary reported on the meeting of county secretaries of this state held in Lansing, Sunday, February 7, 1937.

Motion was made by Doctor Norris that a member in each town be appointed to act as a press committee to contact local press, with an account of each meeting, and that Secretary send report of each meeting to State Secretary. Carried. The meeting adjourned.

JACKSON COUNTY

HORACE W. PORTER, M.D., *Secretary*

The regular monthly meeting of the Jackson County Medical Society for February, 1937, was held on Tuesday evening, the 16th, at the Hotel Hayes in the main dining room. After the dinner the meeting was called to order by the president, Dr. Crowley. The minutes of the last meeting were approved as published in the *Bulletin.*

The secretary read a letter of appreciation for flowers from Dr. E. H. Corley and relayed a verbal message of appreciation from Dr. Riley. At the time of writing these minutes he is reminded of a similar letter from the Stewart families on a similar matter for the flowers sent on the occasion of the death of the father of M. N. and L. L. which should have been read. A communication from Mrs. Ethel E. Dow was read announcing the opening of a convalescent home on U. S. 12 just east of Chelsea. Announcement of the March meeting of the Highland Park Physicians' Club meeting on March 4 was made together with the general subject of that meeting.

Jackson County showed its intention to coöperate with the M.S.M.S. in its proposed educational plan for doctors of the state by having the first of the speakers suggested by the M.S.M.S. to address the next Mercy Hospital staff meeting on Tuesday, March 2. This speaker is to be supplied by the syphilis subcommittee of the preventive medicine committee and Dr. Crowley, chief of staff, invited the entire medical society to attend this meeting.

The meeting was then adjourned.

LENAWEE COUNTY

E. T. MORDEN, M.D., *Secretary*

The regular monthly meeting of the Society was held February 16, 1937, following a 6:30 p. m. dinner at the Lenawee Hotel, Adrian, with the following members present: Drs. Bland, Chase, Claxton, Hewes, C. H. Heffron, H. H. Heffron, Hornsby, Howland, Lane, Mackenzie, McCue, Miller, Morden, Murawa, Patmos, Peters, Raabe, Rogers, Stafford, Whitney, Wood (21).

President Chase being excused for the time being, Dr. Patmos acting pro tempore, called the meeting to order and the minutes of the previous meeting were read and approved.

President Chase now took the chair and introduced Dr. Chester W. Waggoner, of Toledo, who gave a very comprehensive and interesting address on "Protein Shock Therapy."

Secretary Morden gave a brief account of the State Secretaries meeting at Lansing on February 7.

Dr. H. H. Heffron, chairman of the special committee on methods of care of the indigent sick, reported progress and asked that a special meeting be called for the 19th of February to hear some proposition to be made by the County Manager of the Emergency Relief Administration. The President ordered that such a meeting be called after some discussion in its favor.

There being no further business to come before the Society, the president adjourned the meeting.

MONROE COUNTY

FLORENCE AMES, M.D., *Secretary*

A resolution requesting the organization of a Woman's Auxiliary was passed at the meeting of the Monroe County Medical Society on January 21, 1937. President O. E. Parmelee appointed as Advisory Committee to the Auxiliary Doctors S. C. Penzotti, Dundee, and E. C. Long and Florence Ames, Monroe. The committee were very fortunate in securing Mrs. Albert H. Reisig, Monroe, to act as chairman for the ladies during the process of organization. The ladies plan to have their first meeting in March.

Dr. J. Hugh Lewis, of Detroit and Wyandotte, gave a splendid discussion of "Rheumatism in Childhood."

For the February 18 meeting the society tried a new departure and gathered at the Woodland-Dixie Inn, a road house on M56, recently reopened under a new management. The atmosphere of the inn is very informal. Every one had a lot of fun.

Dr. Russell Costello, of Detroit, was our guest and spoke on "Neuritis and Its Treatment." His talk was highly interesting.

Dr. Florence Ames gave a report of the Annual Conference of Secretaries held in Lansing, February 7.

MUSKEGON COUNTY

L. E. HOLLY, M.D., *Secretary*

Regular monthly, Scientific Meeting of the Muskegon County Medical Society was held at the Century Club, Friday, January 29, at 6:00 P. M. Following dinner the meeting was called to order by Dr. Colignon, as Dr. Mandeville, the president, was absent because of illness.

The applications for membership of Doctors Meengs, August, and Bowers, having been approved by the Executive Committee, were presented for final action.

Dr. Kerr and Dr. Fleischman were appointed as tellers. The three names were voted upon by ballot. Thirty-five votes were cast, all favorable. Dr. Colignon declared Doctors Meengs, August and Bowers as members of the Muskegon County Medical Society upon payment of their annual dues.

President pro tem Dr. Colignon introduced Dr. German, pathologist at Blodgett Memorial Hospital, Grand Rapids, who talked on "Spain," giving first a short review of the history of this country up to the present time.

Following this brief history, several reels of movies were shown of the life in Spain taken in 1935 and 1936. Many of the buildings have now been completely destroyed.

Dr. German's two summers in Spain were spent with Dr. Ortega at the Cancer Institute in Madrid. After his lecture, he demonstrated many microscopic slides stained by the Ortega method which differentiates types of cell structure by their variation in staining qualities.

The meeting adjourned at 10:00 P. M.

NORTHERN MICHIGAN

GILBERT B. SALTONSTALL, M.D., *Secretary*

The regular monthly meeting of the Northern Michigan Medical Society was held at the Hotel Perry, Petoskey, Friday, February 12, with President Christie in the chair. Twelve regular members were present and two guests.

The minutes of the December meeting were read and approved. The secretary gave a report of the County Secretaries Conference held February 7 at Lansing. At the suggestion of the president and secretary the time for meetings was changed from 5:30 P. M. to 6:00 P. M.

The question of reorganization of our now extinct Women's Auxiliary was brought up by Dr. Mayne. Disposition of this matter was left for the March meeting. A motion that the Society continue regular meetings through the summer months was made by Dr. Mayne, seconded by Dr. Saltonstall. Motion carried.

One of our guests, Dr. John Trudeau, was invited to join our Society.

The following committees were appointed by the president:

Medico-legal—Dr. McMillan, Dr. Mayne, Dr. Van Leuven.

Membership—Dr. Christie, Dr. Frank, Dr. Saltonstall.

Program for March—Dr. G. E. Frank.

The meeting adjourned.

ST. CLAIR COUNTY

GEORGE M. KESL, M.D., *Secretary-Treasurer*

A regular meeting of this Society was held Tuesday, February 16, 1937, at the Harrington Hotel, Port Huron, Michigan. Preceding the meeting supper was served to eighteen members and four guests. Doctor Howard O. Brush, President, was in the chair when the meeting was called to order. Minutes were dispensed with in order to save time. A letter from the Science Editor of the *Literary Digest,* Mr. Donald G. Cooley, was read, expressing the regret of that publication for its article in the January 30, 1937, issue and promising, "To do our best to make amends in a forthcoming issue." A motion was adopted to hold our first meeting of April with the Macomb County Society at Mount Clemens and hear Dr. William Reveno of Detroit on, "The Medical Management of Hyperthyroidism." Announcement of the next meeting to be held at Port Huron in conjunction with the Seventh District Dental Association on March 2, 1937, was made by the President and the speakers are to be Dr. Ralph Sommer of U. of M. and Dr. A. C. Curtis of the U. of M. An invitation from the Highland Park Physicians Club for their symposium of March 4, 1937, was read. Dr. H. K. Shawan of Detroit spoke on "Tumors of the Breast." After a wholesome discussion the meeting adjourned. Dr. J. W. Webster, resident surgeon of Receiving Hospital, Detroit, was present as a guest of the Society.

INGHAM COUNTY MEDICAL SOCIETY

ANNUAL CLINIC

Olds Hotel, Lansing

Thursday, April 29, 1937, 1:00 P. M.

FIVE DISTINGUISHED LECTURERS

ORATION FOLLOWING DINNER

at 6:30 P. M.

All members of the Michigan State Medical Society are cordially invited to attend this one-day clinic.

WOMAN'S AUXILIARY

Mrs. A. V. Wenger, *President*, 132 Grand Avenue, N. E., Grand Rapids.
Mrs. G. C. Hicks, *President-Elect*, 1009 Wildwood Ave., Jackson.
Mrs. Claire L. Straith, *Vice President*, 19305 Berkley Drive, Detroit.
Mrs. Frank W. Hartman, *Press Chairman*, 7440 La Salle Blvd., Detroit.
Mrs. Carl F. Snapp, *Secretary-Treasurer*, 980 Plymouth Road, S.E., Grand Rapids.

COUNTY AUXILIARIES

Eaton County

The Woman's Auxiliary to the Eaton County Auxiliary held their February meeting in the Dew Drop Inn in Charlotte. Following dinner, which was served at 7 P. M., the members went to the home of Mrs. John Lawther for the business meeting and program. The president, Mrs. Wilevsky, presided; the program was arranged by Mrs. Van Awk and Mrs. Hargrave. Miss Sprange of Olivet gave an interesting review of "Gone With The Wind" by Margaret Mitchell.

Jackson County

The Woman's Auxiliary of the Jackson County Medical Association enjoyed the sixth of a series of winter programs planned by its president, Mrs. Thomas Hackett, and her efficient committee. Taking as keynote the words of Mrs. Robert E. Fitzgerald, the president of the National Auxiliary, as voiced in the 1936 convention, that the Auxiliary meetings should be directed to "the mind, the heart, and the hand," these programs have provided inspiring presentations of matters relating to civic affairs, have stimulated participation in related local projects, and have been enriched by much of beauty in the fields of music and literature.

A buffet dinner in the attracive home of Mrs. R. H. Alter opened the February meeting, after which Mr. Fred Johnson of the Michigan Children's Aid Society, spoke informally of the work of this valuable organization. He told the history of the development of public concern for the child who does not have the support and protection of a normal home, and explained the modern approach to the problem and the reasons for that approach. A lively and most instructive discussion followed the address. The speaker made a distinct contribution to the Auxiliary's knowledge and understanding of this particular civic problem.

The Auxiliary to the Jackson County Medical Society met at Westwood Inn Tuesday evening where dinner was served to thirty-five members.

Dr. Philip E. Riley gave a discussion and explained the proposed Basic Science Law now pending before the state legislature. Reverend Carl S. Winters, pastor of the First Baptist Church, who was introduced by Mrs. G. R. Bullen, gave a book review of James Hilton's "Lost Horizon." His own interesting interpretations of the book added much to the story. Mrs. J. E. Ludwick presided in the absence of the president, Mrs. T. E. Hackett.

The program committee with Mrs. W. E. McGarvey as chairman, made the arrangements for the meeting.

Kalamazoo

The Woman's Auxiliary to the Kalamazoo Academy of Medicine has had several interesting and enjoyable meetings this year under the leadership of the President, Mrs. Clarke B. Fulkerson, and the Program Chairman, Mrs. K. L. Crawford.

Bountiful coöperative dinners have been enjoyed preceding the evening programs.

At the October meeting, held at the home of Mrs. H. A. Rigterink, a most fascinating program was presented by Mrs. C. E. Boys on her hobby of dolls. She told briefly the history of doll making and showed her collection of exquisite native dolls obtained in her travels in foreign lands.

Professor Lemuel F. Smith spoke on his summer in England at a meeting held in November at Mrs. Boys' home.

The Academy of Medicine were hosts at dinner to the ladies at the December meeting held in the Crystal Room of the Columbia Hotel. Dr. William C. Halnon of the National Youth Administration was the speaker of the evening and told of the National Youth Movement with which he is affiliated.

January and February meetings have been given over to informal evenings with no programs planned so that friendship and sociability may be enjoyed.

The March meeting, held at the home of Mrs. Robert Armstrong, featured Mrs. Milton C. Simpson, who presented a book review on "Awav to Cape Breton."

Individual serving trays have been purchased by the Auxiliary to facilitate serving of large groups at the meetings.

The group also continues its interest in the Hard of Hearing School for which a Radio Ear was purchased last year.

Kent County

The meeting of the Women's Auxiliary to the Kent County Medical Society was held in the Medical Arts Club Rooms at 2:30 P. M., Wednesday, January 10. Mrs. Benjamin P. Merrick spoke on "Possible Neutrality for the United States" and her talk was followed by active discussion. Teams captained by Mrs. S. L. Moleski and Mrs. P. S. VanBree served tea with Mrs. W. D. Lyman and Mrs. Reuben Maurits pouring.

On January 20, the Kent County Medical Auxiliary sponsored a benefit bridge and tea party to supply funds for the placement of *Hygiea* magazine in the rural schools of the county. The following members of the Auxiliary opened their homes for bridge: Mrs. Henry J. Pyle, Mrs. Lynn Ferguson, Mrs. Robert H. Denham, Mrs. Henry J. Vandenberg, Mrs. Thomas C. Irwin, Mrs. Reuben Maurits, Mrs. V. N. Wenger, Mrs. A. B. Smith, Mrs. J. B. Whinery, Mrs. Harrison L. Collisi, Mrs. Burton R. Corbus, Mrs. Dewey Heetderks, Mrs. William Torgerson, Mrs. James Brotherhood, Mrs. Don Chandler, and Mrs. Wm. J. Butler. At the conclusion of bridge, tea was served in the home of Mrs. Carl Snapp.

On February 10, the monthly meeting was held in the Medical Arts Club Rooms with Mrs. V. N. Wenger, state president of the organization, as guest speaker. She gave a very interesting talk on the activities and objectives of the State and National Auxiliary.

Our March meeting was of special interest. Dr. Carl N. Snapp, a member of the state legislative

committee, spoke on the proposed Basic Science Law and the importance of this bill being passed.

The Auxiliary were very pleased and delighted to receive an invitation from the Kent County Medical Society to a dinner dance at the Pantlind Hotel, March 13, at which the Medical Society was host. To our surprise the orchestra consisted of doctors. Dr. A. B. Smith, president of the Kent County Society, was orchestra leader and pianist. The other members were trombone, Dr. L. A. Faust; tuba, Dr. J. D. Miller; violin, Dr. Charles Bell; banjo, Drs. A. B. Thompson and M. M. Marrin. The auxiliary felt highly complimented inasmuch as this was the first party tendered us by our husbands. The party was a huge success and Dr. Smith and his entertainment committee seem to be geniuses at this sort of thing.

On March 20, the *Hygiea* committee had a rummage sale and the proceeds were used to help place this magazine in the public schools.

Wayne County

The Public Relations meeting in March participated in by the Wayne County Auxiliary, included the Ninth Annual Child Health Institute presented by the J. L. Hudson Company, March 8 to 13, in the Hudson Auditorium, March 11 being assigned to the Auxiliary. Dr. Thomas K. Gruber, Pres. W. C. M. S., presided at the morning session and introduced Dr. W. E. Blatz, University of Toronto, who spoke on the "Romance of the Quintuplets." Dr. Blatz substituted for Dr. Allan Roy Dafoe, O.B.E., whose schedule was interrupted by illness. Dr. William E. Blatz, who spoke also at the afternoon session on "The Development of the Quintuplets," was introduced by Mrs. Ledru O. Geib, First Vice President of the Auxiliary.

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The Challenge to Womanhood from the American Society for the Control of Cancer plus Governor Frank Murphy's proclamation of Cancer Week in Michigan, March 21, has spurred women to greater efforts in a war to save human life through education. In this connection the Women's Auxiliary of the W.C.M.S. and the Women's Field Army will present Wm. A. O'Brien, M.D., in the Crystal Ballroom of the Statler hotel, Wednesday, March 24 at 2:15 P. M. "Women's Contribution to the Cancer Problem" will be Dr. O'Brien's subject. The lecture is free and all women are invited to come.

A subscription luncheon honoring Dr. O'Brien will be served at Medical Headquarters, Woodward at Canfield, at 12:15, the same date. It is especially desired that doctors and their wives from neighboring counties will attend this luncheon and lecture.

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The regular monthly meeting of the Auxiliary will be held in the Auditorium of the Detroit Free Press Bldg., Friday, March 19, 2:00 P. M. Miss Aileen Apadford will speak on "Being Your Own Decorator." Mrs. Ralph H. Bookmeyer will receive reservations which are limited to 100 persons.

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Wishes for speedy recovery are being sent to the home of Dr. and Mrs. Roger V. Walker; little Francis Walker is bravely fighting to avoid a mastoid operation.

The young bride was extolling the virtues of her husband to a friend.

"George is just the most generous man in the world," she declared. "He gives me everything credit can buy."—*Pearson's.*

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

BIRTHS AND DEATHS INCREASE IN 1936

Michigan temporarily set aside in 1936 the statistician's fear of a stationary population, for provisional statistics for that year indicate the highest birth rate in five years. An increase of 1,054 births was recorded last year when the natural population growth of most other states was declining. A total of 88,457 births gave this state a rate of 17.41 births per 1,000 population, the highest since 1931. A one per cent increase was indicated over the 1935 rate of 17.21 when 87,403 births were reported.

This increase gave Michigan an excess of 33,680 births over deaths despite the highest death rate recorded here in seven years. Provisional figures show that 3,726 more persons died last year than in 1935. A total of 54,777 deaths was reported with a rate of 10.78 deaths per 1,000 population, the highest since 1929. The 1936 rate is a seven per cent increase over the 1935 rate of 10.05 when 51,051 deaths were reported. This increase is typical of the general six per cent mortality rise experienced throughout the nation last year.

Deaths of infants under one year of age also increased in 1936, 4,490 deaths being recorded, compared with 4,170 in 1935. The infant mortality rate of 50.76 deaths per 1,000 live births is an increase of 6.4 per cent over 1935 rates. Rates for 1936 are estimated on the basis of a population of 5,080,000 for Michigan.

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DATA ASKED ON PREVAILING OCCUPATIONAL DISEASES

To determine the prevailing occupational diseases in Michigan, the Bureau of Industrial Hygiene has sent a questionnaire to 4,943 physicians throughout the state requesting data on types of cases treated since March 1, 1936. Of the total number of questionnaires, 2,361 were sent to physicians in Detroit and 2,582 to outstate physicians.

The response to this request has been favorable thus far, and reports are coming in daily. The final compilation of this data will be of tremendous value in directing the efforts of this bureau toward the prevention of occupational hazards to health and will aid in the administration of contemplated occupational disease legislation proposed for this session of the State Legislature.

Statutes require the reporting of cases of poisoning by lead, phosphorous, arsenic, or mercury, or of anthrax or compressed air illness. This survey, however, covers reports of all cases resulting from dust; from any poison, whether solid, liquid, gas or vapor; any dermatoses or illnesses resulting from excessive temperature; humidity, posture strain or other affliction related to the patient's occupation.

* * *

COUNTY AND DISTRICT HEALTH OFFICERS

Dr. Clifton E. Merritt, Coldwater physician who completed the health officers' training course at the University of Michigan, has been appointed director of the recently organized Dickinson County Health Department. Dr. Merritt's headquarters will be at Iron Mountain.

Dr. L. H. Gaston, who has been directing local health activities in Health District No. 7, including

Clare, Gladwin and Arenac counties, has been selected to direct the new Sanilac County Health Department, the first health unit to be organized in the Thumb District. Headquarters will be at Sandusky.

Dr. D. A. Vander Slice, son of Lansing's health officer, Dr. E. R. Vander Slice, and a recent graduate of the University health officers' training course, will assume Dr. Gaston's work in District No. 7 with headquarters at Gladwin. No director has yet been appointed to head the new Bay County Health Department.

Michigan ranks today with the more progressive states in providing modern health protection for rural areas similar to that existing in the larger cities. Only 30 of Michigan's 83 counties do not yet have full time, trained health officers providing this service.

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DENTAL HYGIENE PROGRAMS

Extensive dental health promotion programs are being carried on in the schools of Ingham and Muskegon counties under the supervision of Dr. William R. Davis, director, Bureau of Mouth Hygiene. Purpose of the program is to aid teachers in the promotion of dental hygiene instruction in the classroom. Pupils and parents are also instructed in the importance of adequate diet, early and periodic dental care, and mouth cleanliness in the development of healthy teeth.

Local dental societies are participating in the programs with free dental examinations for elementary school pupils accompanied by parents. The Lansing Department of Health and the Lansing Board of Education are sponsoring the program in all of the elementary schools of that city.

More extensive dental programs similar to these are being planned in coöperation with local dental societies throughout the state. Dr. Floyd DeCamp, dentist, and Miss Ruth Rogers, dental hygienist, are assisting Dr. Davis with the local programs.

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BUREAU OF ENGINEERING

Algonac has voted an additional bond issue of $18,000 to finance the new filtration plant which is now under construction, according to a report from the Bureau of Engineering.

C. T. Mudgett, assistant engineer in charge of operation of sewage treatment plants for the Michigan Department of Health, has accepted a position in charge of the sewage treatment plant recently completed at Muskegon.

Revised bulletins of the Bureau of Engineering now ready for distribution upon request include the following: No. 5—The Chemical Closet; No. 13—Mosquito Control; and No. 19—Well Water Supplies for Municipalities.

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MIDWEST CONFERENCE ON OCCUPATIONAL DISEASE

The Michigan Department of Health is collaborating with the Michigan State Medical Society, Detroit Department of Health, Wayne County Medical Society and Engineering Society of Detroit in the plans for the Midwest Conference on Occupational Diseases which will be held May 3 to 7 at the Statler Hotel in Detroit in conjunction with the annual meetings of the Michigan and American Associations of Industrial Physicians and Surgeons.

General chairmen of the conference include Henry Cook, M.D., Gordon C. Harrold, Ph.D., Carey P. McCord, M.D., Clyde C. Slemons, M.D., and Henry F. Vaughan, Dr.P.H. Interested members of the health and engineering professions are invited to attend the occupational disease conference, the scope of which will include extensive practical discussions of the dusty lung diseases, tuberculosis in industry, industrial skin diseases, the engineering control of industrial exposures, the making of industrial hygiene surveys, air conditioning, and compensation for occupational diseases. No registration fee is anticipated for attendance at the conference. Dr. McCord, director, Bureau of Industrial Hygiene, Detroit Department of Health, is acting as executive co-chairman in charge of arrangements.

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AUTOMOBILE DEATHS IN 1936

Automobiles killed 1,891 persons in Michigan in 1936 to set an all-time high toll for this cause of death, according to reports compiled by the Bureau of Records and Statistics.

The 1936 automobile deaths are thirteen per cent higher than the total of 1,667 deaths reported in 1935, the previous high record. The highest number of automobile deaths in any single month occurred in December when 223 persons were killed. More than 200 persons were killed during each of the last four months of the year, an average of at least seven deaths per day.

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TYPHOID CARRIER CONTROL

The carrier problem, the most important one in the eradication of residual typhoid fever, is receiving intensive consideration by the Bureau of Communicable Diseases. At present every case of typhoid fever reported to the department is investigated by a representative of either the state or local health departments and followed up to ensure that no new carriers escape detection.

Thirty-three carriers, each a potential source of wide-spread outbreaks of typhoid fever, were discovered and instructed in prevention during the past year. A total of 200 carriers are now registered by the department, but it is estimated that probably 1,500 remain undiscovered, the greatest menace being the foodhandler who, unknowingly, is a carrier of typhoid fever.

* * *

MAY DAY—CHILD HEALTH DAY 1937

In accordance with the Congressional Resolution of May 18, 1928, Saturday, May 1, 1937, will be known as May Day—Child Health Day in Michigan. National and state proclamations are expected to add to the attention devoted to local programs commemorating the purpose of the day, "Health Protection for Every Child."

School groups, parent-teacher organizations, and other community educational and health agencies are sponsoring programs to promote "the extension of year-round child-health services in every community, including services for physically handicapped children."

Miss Marjorie Delavan, director, Bureau of Education, Michigan Department of Health, has been appointed as chairman of May Day—Child Health Day in Michigan. Observances by community groups may take the form of an evaluation of child health services in the community based on a survey of existing child health conditions and organizations to promote child health; the launching of new local child health projects, possibly the beginning of the annual summer preschool round-up; and exhibits or programs celebrating gains made. Projects for children are suggested as a climax for the year's health program—festivals, athletic meets, programs, exhibits celebrating children's growth, vigor and safety from health hazards.

IN MEMORIAM

Dr. Joseph Cooperstein

Dr. Joseph Cooperstein of Flint is dead. He was born in Russia on October 12, 1882, and came to the United States in 1900 with little else but a determination to make good. He graduated from the College of Physicians and Surgeons, University of Illinois, and interned in the Jewish Consumptive Hospital in Denver. He was married in 1916 to Sally Branson. In 1918, he established his home and office in Flint, for the general practice of medicine. Dr. Cooperstein was well posted on not only medical subjects, but on subjects in various other fields. He was a linguist of great ability, he spoke seven languages, Hebrew, German, Russian, Yiddish, Italian, Aramaic and English. He was an active member of the Genesee County Medical Society since the time of his arrival in Flint. He is survived by his wife, a son David, and two daughters, Mitzi and Judith, his father, who is living in Russia, a half-sister in Palestine, and a half-brother in Detroit.

Dr. William G. Kelly

Dr. William G. Kelly of Bay City died at his home on February 17, 1937. He was born in Kingston, Ontario, in 1874, and was graduated from the medical department of Queen's University, Kingston, in 1897. Following his graduation, he located in Bay City, where he was in practice up to the time of his last illness. In 1900 he married Miss Ethel Landeryou. Dr. Kelly was Bay County Coroner from 1909 to 1913. He was past president of the Bay County Medical Society. He is survived by his widow, one son, Howard, who lives in Bay City, and one brother, Jack, in California.

Dr. John H. Kimble

Dr. John H. Kimble of Plymouth, Michigan, died after a brief illness in February. He was born in Manchester, Ohio, in 1867. He had practiced for over forty-five years. He graduated from the University of Michigan in 1891 with the degrees of Ph.D. and M.D. During the World War, Dr. Kimble enlisted for military service and was stationed at Camp Brady. He is survived by his widow. He was a member of the Wayne County Medical Society, Michigan State and American Medical Associations.

Dr. William T. Morrison

Dr. William T. Morrison of Pigeon died at his home on February 21, 1937, after a year's illness. Dr. Morrison was born in Lambton County, Ontario, seventy-one years ago. He received his early education at Strathroy High School and studied at the Bellevue Hospital in New York City where he graduated as a nurse in 1892. He attended and received the degree of M.D. from the Detroit College of Medicine in 1896. Dr. Morrison first practiced at New Haven, later moving to Bayport and Midland. He located at Pigeon in 1905 where he practiced until 1918. Following this, he practiced nine years at Albion, returning to Pigeon in 1927 where he practiced until his death. He was married a second time in 1929 to Miss Jean Duncanson of Harbor Beach. He leaves his widow and two daughters by his former marriage.

Dr. George E. Potter

Dr. George E. Potter of Detroit died March 16, 1937, after an illness of eight days. Dr. Potter was born in Essex, Ontario, sixty-three years ago. He was graduated from the Detroit College of Medicine in 1896. Following a year's interneship at St. Mary's Hospital; he entered upon the practice of surgery. He was a member of the American College of Surgeons, The Detroit Academy of Surgery, the Wayne County, Michigan State and the American Medical Associations. He is survived by his wife, Carrie B. Potter, four brothers, Drs. Andrew D., Willis, and Lewis, and Mr. Fred Potter, and two sisters, Mrs. William Hyland and Mrs. Fred Whitman.

Dr. James T. Redwine

Dr. James T. Redwine, superintendent of the Michigan Farm Colony for Epileptics at Wahjamega since 1934, died at the University Hospital, Ann Arbor, March 16, 1937. The cause of death was heart disease. He was born at Supply, Arkansas, sixty-one years ago. From 1918 to 1923, Dr. Redwine was Superintendent of the State Hospital at Newberry. He was graduated from the College of Physicians and Surgeons, St. Louis. He is survived by his wife, Anna, and one son, Jack, a student at the University of Michigan. He was at one time president of the Tuscola County Medical Society.

Dr. Edward A. Schilz

Dr. Edward A. Schilz, member of the State Council of Health, died suddenly Monday afternoon, February 1, 1937, at his home in Grand Ledge where he had carried on his medical practice since 1899.

Born in Norfolk County, Ontario, March 23, 1872, Dr. Schilz was educated in the Canadian schools and later received his medical degree from the Detroit College of Medicine. After two years of practice at Delta Mills, he came to Grand Ledge in 1899 where he has since served as friend and medical advisor to hundreds of townspeople who mourn his loss. During the World War, Dr. Schilz rendered distinguished service as a captain in the United States Army Medical Corps.

Dr. Schilz's death came as a shock to members of the health professions of Michigan whom he had served in an advisory capacity on the State Council of Health since his appointment by Governor Fitzgerald on May 27, 1935. Four decades of conscientious service in the practive of his profession gave Dr. Schilz a broad understanding and faith in the ultimate objectives of public health. With unassuming dignity he performed well the official duties placed upon him and thereby won the lasting respect of his fellow workers.

Renal Insufficiency Developing During Prolonged Use of Alkalis

J. Murray Steele, New York (*Journal A.M.A.*, June 13, 1936), reports a case in which the use of alkali through a span of many years for the relief of pain due to a duodenal ulcer was followed eventually by the passage of albumin, red blood cells and casts in the urine, and the appearance of severe renal insufficiency, as indicated by elevation of the urea nitrogen of the blood and marked decrease in the ability of the kidneys to excrete urea and to concentrate the urine. Recovery followed discontinuance of the use of alkalis. The usual neurologic manifestations of alkalosis—nausea, headache, nervousness and tetany—were absent. Fatigue and nocturia were the only complaints.

General News and Announcements

The One Hundred Per Cent Club of the Michigan State Medical Society:

1. Clinton County Medical Society
2. Eaton County Medical Society
3. Luce County Medical Society
4. Manistee County Medical Society
5. Muskegon County Medical Society
6. Newago County Medical Society
7. Oceana County Medical Society
8. Ontonagon County Medical Society
9. Schoolcraft County Medical Society
10. Tuscola County Medical Society

The above County Medical Societies have paid dues in full for each and every member of the County and State Medical Society. A number of other County Societies lack but a few, sometimes only one or two, of being One Hundred Per Cent. Have YOU paid your dues?

Dr. Abraham Bloch of Detroit lost his father with pneumonia, also a brother, during the first week in March.

Definition of good-will: "The disposition of a pleased customer to return to the place where he has been well treated." From the United States Supreme Court.

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Dr. Cameron Haight, of Ann Arbor, led a discussion on "Chest Problems" at the March meeting of the Livingston County Medical Society held in Howell, March 5, 1937.

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Dr. Perry Robertson of Ionia spoke to the Ionia-Montcalm County Medical Society on "Mental Hygiene," on March 9, 1937. The meeting was held at the Hotel Belding, Belding, Michigan.

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Dr. Henry Cook, of Flint, president-elect of the Michigan State Medical Society, spoke to the Optimists' Club of Flint on February 26. His subject was "Socialized Medicine."

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Professor W. H. Hobbs, professor emeritus of Geology of the University of Michigan, gave an illustrated lecture before the Wayne County Medical Society March 8.

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The Journal of the American Medical Association for March 6, 1937 (Vol. 108, No. 10), contains six articles on venereal disease with emphasis on clinical problems of syphilis and its control.

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Dr. Don M. Morrill, formerly superintendent of Blodgett Hospital, Grand Rapids, assumed his new duties as superintendent of Receiving Hospital, Detroit, on March 15.

* * *

September 27, 28, 29, 30, 1937, are the dates for the 72nd Annual Convention of the Michigan State Medical Society. Plan now to attend this Convention in Grand Rapids, the Furniture Capital of America. Have you sent in your hotel reservation?

The A. M. A. will hold its annual meeting in Atlantic City the week of June 6, 1937.

The American Medical Golfing Association will hold its 23rd annual tournament at Seaview, Atlantic City, N. J., on Monday, June 7, 1937.

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Dr. Henry A. Luce of Detroit, Chairman of the Mental Hygiene Committee of the Michigan State Medical Society, spoke on "Mental Hygiene" to the physicians of Jackson at the Foote Hospital, Jackson, on Tuesday, March 9, 1937.

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The Annual Meeting of the Upper Peninsula Medical Society will be held in Houghton, Michigan, on August 19 and 20. Many prominent speakers are scheduled for the program of this meeting. Upper Peninsula physicians are asked to bear the date in mind when planning their summer activities.

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Dr. Donald M. Morrill of Grand Rapids has been appointed superintendent of the Receiving Hospital, Detroit. Dr. Morrill has been superintendent of the Blodgett Memorial Hospital, Grand Rapids, for thirteen years. He was graduated from the University of Michigan Medical School in 1918.

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Dr. A. M. Wehenkel of Detroit has purchased Paton Hall in Romeo, Michigan, once an exclusive boarding school for girls, to open it in April as a tuberculosis sanitarium. The Wehenkel Sanitarium in Farmington will be closed and the patients will be transferred to the new sanitarium at Romeo.

* * *

"State Society Night" will be marked by the Kalamazoo County Medical Society on May 27, 1937, at the Kalamazoo Country Club, Kalamazoo. The Lenawee County Medical Society will hold its "State Society Night" on June 15th. Dinner will be held at the Lenawee Hotel in Adrian at 6:30 P. M.

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The Public Relations Bureau of the Medical Society of the State of New York sent out a questionnaire to its membership asking these questions. (1) If you had a son would you want him to select medicine as a career? (2) How old were you (approximately) when you determined to be a doctor? (3) What decided you? (Please explain the incident, influence or reason which resulted in fixing your ambition.)

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The third annual meeting of the American Neisserian Medical Society will be held on June 8, 1937, in the Senator, Atlantic City. The program will consist of papers and discussions of the various phases of the management and control of gonorrhea. All who are interested are cordially invited to be present. The meeting will begin promptly at 10:00 A. M. and will continue through the day.

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You have only a few more days to pay your dues to your county medical society in order that your name may be included in the "Directory Number" of THE JOURNAL of the Michigan State Medical Society. Rush your check to the County Secretary now and be sure you are certified to the State Society before April 15 so your name will be included in the list of members in good standing.

Hurry, hurry, hurry! The limited supply of the Medical History of Michigan is going fast at the new reduced price of $3.00. Have you secured your copy of this valuable historical account of Medicine in Michigan? It will be impossible to secure this set after the present supply is exhausted. Order now through 2020 Olds Tower, Lansing. The price is $3.00 for the two volumes.

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Saturday, May 1, will be observed as Child-Health Day throughout the United States. The object is the protection of the health of every child. A May Day chairman will be appointed by the state health officer. Programs will be in the nature of (1) an evaluation of child-health services in the community based on a survey of existing child health conditions and organization to promote child health, (2) the launching of new local child-health projects, and (3) exhibits or programs celebrating gains made.

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A very complete and informative article by John H. Stokes, M.D., entitled "Combatting Early Syphilis," appeared in the *Reader's Digest* for March, 1937, Vol. 30, No. 179, p. 9. Dr. Stokes is a member of the faculty of the University of Pennsylvania. This is evidence of the effort of lay magazines to aid in the nation-wide campaign to reduce the scourge of syphilis. The *Reader's Digest,* Pleasantville, New York, will provide reprints of Dr. Stokes' article on "Combatting Early Syphilis" at a dollar in lots of one hundred or more.

* * *

The report of the American Foundation Studies in Government will be issued soon. This Foundation made a nation-wide survey, consulting competent medical opinion throughout the country, on the conditions of medical practice—what changes the current era warrants adopting for the delivery of medical care to the American People, and what form such changes, if any, should take.

Our opportunity is now. Study the report; it was written by your colleagues. Then let us act. Informed public opinion expects no less than that of us.

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Beware of man posing as a clinical pathologist who visits physicians and asks them to endorse checks to pay for repairs to his automobile. This man has been reported working this racket in Detroit. He is about 5 feet 9 inches tall; dark brown wavy, wiry hair, a high forehead, dark skin, large brown eyes; thick skin with deep wrinkles; teeth excellent and very white; and weight about 170 lbs. Superintendent of the Pennsylvania State Police, Lynn G. Adams, sent out a warning to all states to be on the lookout for this imposter.

* * *

Crippled and Afflicted Child Commitments For February 1937:

Crippled Child: Total of 148.

Of the total number 59 went to the University Hospital and 89 went to miscellaneous hospitals.

From Wayne County (included in above totals): Total cases 37.

Of the 37 cases in Wayne County, 1 went to University Hospital and 36 to local hospitals.

Afflicted Child: Total of 1047.

Of the total number 202 went to University Hospital and 845 went to miscellaneous hospitals.

From Wayne County (included in above totals): Total cases 224.

Of the 224 cases in Wayne County, 19 went to University Hospital and 205 went to miscellaneous hospitals.

A few more of your friends who entered technical exhibits at the Detroit Convention of the State Society, held in September, 1936, included:

W. B. Saunders Company, Philadelphia, Pa.
Scientific Sugars Company, Indianapolis, Ind.
S.M.A. Corporation, Cleveland, Ohio.
Sonotone Detroit Company, Detroit, Mich.
Standard X-Ray Equipment Company, Detroit, Mich.
Frederick Stearns & Company, Detroit, Mich.
Taylor Instrument Company, Rochester, N. Y.
Treatment Regulator Corp., Detroit, Mich.
James Vernor Company, Detroit, Mich.
Wall Chemical Company, Detroit, Mich.
Western Electric Hearing Aid, Detroit, Mich.

* * *

Physicians came from all parts of the state on March 10 to attend a Conference held at the Hotel Olds, Lansing. The meeting was addressed by Dr. Henry E. Perry, Newberry, president; by Dr. Henry Cook, Flint, president-elect; by Dr. L. G. Christian, Lansing, chairman of the Legislative Committee of the State Society, and by Dr. J. B. Bradley of Eaton Rapids.

The attendance by counties follows:

Bay: Dr. L. Fernald Foster, Dr. P. R. Urmston, Bay City. *Branch*: Dr. A. E. Brunson, Dr. J. A. Thomas, Coldwater. *Calhoun*: Dr. Wilfrid Haughey, Dr. Wm. M. Dugan, Battle Creek. *Cass*: Dr. U. M. Adams, Marcellus. *Chippewa-Mackinas*: Dr. F. J. Moloney, Sault Ste. Marie. *Eaton*: Dr. J. B. Bradley, Dr. A. G. Sheets, Eaton Rapids; Dr. V. J. Rickerd, Charlotte. *Genesee*: Dr. Henry Cook, Flint. *Gratiot-Isabella-Claire*: Dr. L. J. Burch, Mt. Pleasant. *Ingham*: Dr. L. G. Christian, Dr. R. J. Himmelberger, Dr. H. A. Miller, Dr. Milton Shaw, Lansing. *Jackson*: Dr. Horace Wray Porter, Dr. John D. VanSchoick, Jackson. *Kalamazoo*: Dr. F. T. Andrews, Dr. C. L. Bennett, Kalamazoo. *Luce*: Dr. Henry E. Perry, president, Newberry. *St. Clair*: Dr. H. O. Brush, Dr. T. F. Heavenrich, Dr. George Waters, Port Huron. *Shiawassee*: Dr. I. W. Greene, Owosso. *Wayne*: Dr. A. L. Brooks, Dr. J. W. Hawkins, Dr. Wm. E. E. Tyson, Detroit. Executive Secretary Wm. J. Burns.

The following guests were also present: Mrs. A. V. Wenger, president, Woman's Auxiliary, M.S.-M.S., and Mrs. Wm. J. Butler, Grand Rapids; Mrs. P. R. Urmston, and Mrs. A. L. Ziliak of Bay City; Mrs. L. G. Christian, Lansing; Mrs. A. L. Brooks, Detroit; and Mr. Larry C. Salter of the *Detroit Free Press,* Detroit.

* * *

Social Security Taxes Now Being Paid

The Federal tax returns required by Title VIII of the Social Security Act are now being filed at a satisfactory rate in the offices of the sixty-four Collectors of Internal Revenue, Commissioner of Internal Revenue Guy T. Helvering announced today. The Commissioner calls attention to the fact, however, that some misunderstanding evidently exists on the part of many taxpayers as to the place to which the returns should be sent and the payments made.

Each employer should file his return on form SS-1 with the Collector of Internal Revenue for the district in which is located his principal place of business. If the employer has no principal place of business in the United States he should file his return with the Collector of Internal Revenue, Baltimore, Maryland. The tax must be paid at the time the return is filed. Checks, drafts or money orders in payment of these taxes should be made payable to the Collector of Internal Revenue.

Title VIII of the Social Security Act, approved August 14, 1935, imposes an excise tax upon employers and an income tax upon their employes

measured by the amount of wages paid on and after January 1, 1937, with respect to employment on and after that date. The rate of each tax for the years 1937, 1938 and 1939 is one per cent of the wages paid. The law provides that the employer shall collect the employee's tax by deducting the amount of such tax from the wages as and when paid. The returns now being filed on Internal Revenue Form SS-1 cover the month of January, 1937. Every employer who, during any calendar month beginning after December 31, 1936, employs one or more individuals in a business not specifically exempt from the tax, is required to make a return on Form SS-1. The returns for the month of January, 1937, must be filed not later than the end of February.

The taxes imposed by Title VIII of the Social Security Act have created a new class of Federal taxpayers, many thousands of whom have heretofore had no occasion to send tax returns and payments to the various Internal Revenue Collectors. This no doubt accounts for the fact that some misunderstanding exists on the part of a portion of these taxpayers in regard to meeting their obligations to the Government under the Social Security Act. Some of the returns and moneys are being sent to the Social Security Board at Washington and some of the taxpayers are making their returns to the various field offices of the Social Security Board, while still others have sent their returns and remittances to the Bureau of Internal Revenue at Washington. The Bureau of Internal Revenue states that every possible effort is being made to refer the returns and moneys promptly to the appropriate Collectors of Internal Revenue where the moneys will be deposited in the designated depositary banks and the returns listed for assessment. It is expected that before the end of the month more than two million returns will have been received in the sixty-four Collector's offices.

Prior to the effective date of the taxes, the sixty-four Collectors of Internal Revenue located throughout the United States compiled lists of the persons and firms apparently subject to the tax and distributed blank returns to them. All possible efforts were made to place a blank in the possession of every potential taxpayer. However, it was explained by the Bureau of Internal Revenue that failure to receive a blank return form did not excuse a taxpayer for failure to file his return and pay the tax on time. Any person liable for the tax who failed to receive a form may secure a blank by making a request upon the Collector of Internal Revenue for his district. The law provides penalties both for delinquency in filing the return and for failure to pay within the required time.

* * *

NORTHERN TRI-STATE MEDICAL SOCIETY

The sixty-fourth annual meeting of the Northern Tri-State Medical Society will be held in the Hayes Hotel, Jackson, Michigan, on Tuesday, April 13, 1937. Dr. W. H. Marshall of Flint, Michigan, president of the Society, will preside. The program is as follows:

Morning Session

Dr. Ernest E. Irons, Professor of Medicine, Rush Medical College, Chicago, Illinois.
"Treatment of Chronic Arthritis"

Dr. Edward A. Oliver, Clinical Professor of Dermatology, Rush Medical College, Chicago, Illinois
"Dermatological Problems Encountered in General Practice"

Dr. William Cubbins, Assistant Professor of Surgery, Northwestern University Medical School, Chicago, Illinois.
"Compound Fractures and Their Complications"

Dr. E. N. Collins, Crile Clinic, Cleveland, Ohio
"Disease of the Colon"

Dr. Ray Grinker, Professor of Neurology, Chicago University, Chicago, Illinois
"The Epilepsies"

Dr. Roscoe R. Graham, Professor of Surgery, University of Toronto, Toronto, Canada
"Present Status of Gall-bladder Surgery"

LUNCHEON

Afternoon Session

Dr. Elmer L. Severinghaus, Assistant Professor of Medicine, University of Wisconsin, Madison, Wisconsin
"Current Endocrine Problems in Gynecology"

Dr. John S. Lundy and Dr. Edward B. Tuohy, Mayo Clinic, Rochester, Minnesota
"Various Anesthetic Agents—Especially Some of the Newer Preparations"

Dr. George M. Curtis, Professor of Surgery, Ohio State University, Columbus, Ohio
"Intrathoracic Goiter"

Dr. Henry O. Mertz, Professor Genito-Urinary Surgery, Indiana University, Indianapolis, Indiana
"Urinary Tract Symptoms as They Influence Differential Diagnosis of Abdominal Disease"

Dr. William P. Tew, F.R.C.S., Professor of Obstetrics, University of Western Ontario Medical School, London, Canada
"Conservative versus Radical Obstetrics and Gynecology"

Dr. Allan J. Hruby, Secretary Municipal Tuberculosis Sanitarium, Chicago, Ill.
"Value of a Collapse Therapy Program in the Control of Pulmonary Tuberculosis"

Annual Dinner—The Hayes Hotel

Address of Welcome—Dr. E. D. Crowley, President Jackson County Medical Society, Jackson, Michigan

Dr. Phillip Kreuscher, Assistant Professor of Surgery, Northwestern University, Chicago, Illinois
"Backache"

* * *

OCCUPATIONAL DISEASE CONFERENCE*

The Midwest Conference on Occupational Diseases will convene in Detroit, May 3, 4 and 5, and the American Association of Industrial Physicians and Surgeons will follow on May 6 and 7. All sessions except those for Wednesday, May 5, will be held in the Statler Hotel Ballroom. Sessions for Wednesday, May 5, will be held at the Detroit Art Institute. The program of the Midwest Conference on Occupational Diseases is as follows:

Monday, May 3.—Registration, Morning session, 9:00 A.M., Statler Hotel Ballroom; Industry and Industrial Diseases, presiding, Dr. Clarence D. Selby, Medical Consultant, General Motors Corporation, Detroit; "The Midwest Conference on Occupational Diseases," Introductory Address, Dr. Henry F. Vaughan, Commissioner, Department of Health, Detroit; Welcoming Address, Dr. Thomas K. Gruber, President, Wayne County Medical Society, De-

*The programs of the conference on Occupational Disease and that of the Industrial Physicians and Surgeons are given in full. In view of pending legislation on Occupational Disease, the program put on at these conferences should interest every practicing physician in the state, whether he be directly associated with industry or not. A cordial invitation is extended to all members of the Michigan State Medical Society to attend these conferences.

troit; "Industry as a Source of Disease," Dr. Emery R. Hayhurst, Consulting Industrial Hygienist, Columbus, Ohio; "The Worker as Affected by Industrial Exposures," Dr. William D. McNally, Associate Professor Materia-Medica and Toxicology, Rush Medical College, Chicago, Illinois.

Afternoon Session—2:00 P. M., Statler Hotel Ballroom; Pulmonary Diseases in Industry; presiding, Dr. Bruce Douglas, Tuberculosis Controller, Department of Health, Detroit; "Industrial Factors in Tuberculosis," Dr. A. J. Lanza, Assistant Medical Director, Metropolitan Life Insurance Company, New York City; "Industrial Tuberculosis." Dr. Andrew R. Riddell, Division of Industrial Hygiene, Ontario Department of Health, Toronto, Ontario; "The Surgical Treatment of Tuberculosis with Special Reference to Shortened Disability Periods for the Industrial Worker," Dr. E. J. O'Brien, Surgical Director, Herman Kiefer Hospital, Detroit.

Tuesday, May 4.—Registration, Morning session, 9:00 A. M., Statler Hotel Ballroom; Industrial Hygiene Engineering Methods, Appraisal of Exposures—Part I, presiding, Mr. John M. Hepler, Director, Bureau of Industrial Hygiene, Michigan Department of Health, Lansing; "The Industrial Hygiene Survey," Dr. Carey P. McCord, Director, Bureau of Industrial Hygiene, Department of Health, Detroit; "Industrial Hygiene Laboratories and Their Work," (Demonstration of Laboratory Equipment and Procedures), Dr. William G. Fredrick, Assistant Chemical Engineer, Bureau of Industrial Hygiene, Department of Health, Detroit, and Dr. Gordon C. Harrold, Industrial Hygiene Laboratory, Chrysler Corporation, Detroit.

Afternoon session—2:00 P. M., Statler Hotel Ballroom; Control of Exposures—Part 2, Presiding, Professor H. E. Miller, Professor of Public Health Engineering, University of Michigan, Ann Arbor; "Engineering Methods In Iudustrial Hygiene," Dr. Joseph Dalla Valle, P. A. Sanitary Engineer, U. S. Public Health Service, Washington, D. C.; "The Industrial Breathing Zone," Mr. H. O. Danz, Assistant Manager, Power Equipment Department, American Blower Corporation, Detroit; "Practical Methods for the Control of Hygienic Exposures," Mr. G. A. Coburn, Personnel Director, Delco-Remy Division, General Motors Corporation, Anderson, Indiana.

Wednesday, May 5.—Morning session, 9:00 A. M., Detroit Institute of Arts; Industrial Dermatoses, presiding, Dr. Arthur E. Schiller, Detroit Dermatological Society; "Eczematous Dermatoses of Occupational Nature, with Special Reference to Proof of Occupational Origin," Dr. Marian B. Sulzberger, Associate Professor of Clinical Dermatology and Syphilology, Columbia University, New York City; "Industrial Dermatoses in Relation to Compensation," Dr. Robert C. Jamieson, Detroit Dermatological Society; "A System of Therapy for the Industrial Dermatological Case," Dr. Loren Shaffer, Detroit Dermatological Society.

Afternoon Session—2:00 P. M., The Detroit Institute of Arts; Occupational Diseases and the Practitioner of Medicine, presiding, Dr. C. C. Slemons, Commissioner, Michigan Department of Health, Lansing; "The Medicolegal Trends in Occupational Diseases," Dr. C. O. Sappington, Consulting Industrial Hygienist, Chicago, Illinois; "Occupational Diseases and the General Practice of Medicine," Dr. Robert T. Legge, Professor of Hygiene, University of California, Berkeley, California; "Panel Discussion of Occupational Diseases and Industrial Hygiene," Leader, Dr. A. D. Lazenby, Chief Surgeon, Maryland Casualty Company, Baltimore, Maryland. (Ten outstanding persons in attendance including industrial physicians, engineers, public health officials and industrial hygienists will constitute a panel for the discussion of questions submitted in writing related to occupational diseases and industrial hygiene. Additional questions may be submitted from the floor and discussion by those in attendance will be invited.)

American Association of Industrial Physicians and Surgeons

All sessions convene at 9:00 A. M. and 2:00 P. M. and will be held in the Statler Hotel. Dr. Robert P. Knapp, President, American Association of Industrial Physicians and Surgeons, will preside.

Thursday, May 6.—Following a business session will be the address of the President, Dr. Robert P. Knapp, Medical Director, Cheney Brothers, South Manchester, Connecticut; "Solvents, Their Hazards and Safe Practices in Industry," Dr. A. L. Brooks, Medical Director, Fisher Body Corporation, Detroit; "Compensation for Occupational Diseases," Dr. James A. Britton, Medical Director, International Harvester Company, Chicago, Illinois.

Afternoon Session—Chairman, Dr. R. R. Sayers, M.D. (President-Elect); Round Table on Industrial Hygiene, Dr. R. R. Sayers, Medical Officer in Charge, Industrial Hygiene and Sanitation, U. S. Public Health Service, Washington, D. C.

Banquet and Evening Session—The members of the Association will be guests of General Motors Corporation. (Others are invited to attend by subscription.) Toastmaster and chairman, Dr. Loyal A. Shoudy, Chief of Medical Service, Bethlehem Steel Company, Bethlehem, Pennsylvania; Address, Dr. Harry E. Mock, Associate Professor of Surgery, Northwestern University Medical School, Chicago; Address, C. F. Kettering, Vice-President in Charge of Research, General Motors Corporation, Detroit.

Friday, May 7.—Morning Session—Chairman, Dr. McIver Woody (Second Vice-President); (1) "Trends in Industrial Surgery," Dr. John J. Moorhead, New York City; (2) "Bronchogenic Carcinoma," Dr. Carleton B. Peirce, Associate Professor, Department of Roentgenology, University of Michigan; (3) "Medicolegal Aspects of Sudden Deaths in Industry," Dr. Plinn F. Morse, Director of Laboratories, Harper Hospital; (4) "Economics and Ethics of Medicine," Dr. R. G. Leland, Director, Bureau of Medical Economics, American Medical Association, Chicago. Luncheon-chairman, Dr. John J. Prendergast, Medical Director, Chrysler Corporation. The members of the Association will be guests of the Chrysler Corporation and will be addressed by Mr. K. T. Keller, President of the Corporation, on some such subject as "The Value of Medicine to Industry."

Afternoon Session—Chairman, Dr. Otto P. Geier; Round Table on Industrial Medicine and Surgery, Dr. Otto P. Geier, Cincinnati Milling Machine Company, Cincinnati, Ohio.

Saturday, May 8.—For members who wish to remain over and visit medical departments and laboratories in the various plants in Detroit, special arrangements will be made.

"Refresher" courses in Pediatrics, organized by the State Department of Health and financed with Social Security funds, are being arranged to cover four areas in the northern part of the Lower Peninsula, for the weeks of May 3, 10, 17, 24.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review, as expedient.

PRINCIPLES OF CHEMISTRY, An Introductory Textbook of Inorganic, Organic and Physiological Chemistry for Nurses and Students of Home Economics and Applied Chemistry; with Laboratory Experiments, by Joseph H. Roe, Ph.D., Professor of Biochemistry, School of Medicine, George Washington University; Formerly Instructor in Chemistry, Central School of Nursing, Washington, D.C. Fourth edition. St. Louis: The C. V. Mosby Company, 1936. Price, $2.75.

FUNDAMENTALS OF HUMAN PHYSIOLOGY. By the late J. J. R. Macleod, M.B., D.Sc., F.R.S., late Regius Professor of Physiology in the University of Aberdeen, Scotland; formerly Professor of Physiology in the University of Toronto, Toronto, Canada; formerly Professor of Physiology, Western Reserve University, Cleveland, Ohio; and R. J. Seymour, M.S., M.D., Professor of Physiology, Ohio State University, Columbus, Ohio. Fourth edition. St. Louis: The C. V. Mosby Company, 1936. Price, $2.50.

CLIO MEDICA, GREEK MEDICINE. By Fred B. Lund, M.D., Boston, Massachusetts, with seven illustrations. New York: Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 1936.

This little work is an interesting account of Greek medicine in thirteen brief chapters which starts with Hippocrates, discusses the Alexandrian school, the Empiric school, Greek medicine in the Roman Empire, the Methodists, Celsus and Pliny, the Pneumatic and Eclectic schools, Aretaeus, Galen and Oribasius. The work provides a very interesting evening's reading.

LIGHT THERAPY. By Frank Hammond Krusen, M.D., Associate professor of physical medicine, The Mayo Foundation, University of Minnesota; Head of the section on physical therapy, The Mayo Clinic. Forty-two illustrations, second edition, revised and enlarged. Paul B. Hoeber, Inc., Medical Book Department of Harper and Brothers, New York, 1937.

A book that should be read and thoroughly digested by all physicians who use light therapy in their practice.

THE MANAGEMENT OF OBSTETRIC DIFFICULTIES. By Paul Titus, M.D., Obstetrician and Gynecologist to the St. Margaret's Memorial Hospital, Pittsburgh; Consulting Obstetrician and Gynecologist to the Pittsburgh City Homes and Hospital, Mayview, and to the Homestead Hospital, Homestead, Pa., Secretary of the American Board of Obstetrics and Gynecology. With 314 illustrations, including four color plates. The C. V. Mosby Company, St. Louis, 1937.

This volume of 878 pages is not intended as a conventional textbook, but a handbook for advanced students, hospital residents undergoing their special training and for those interested in abnormal phases of obstetrics. There are a few chapters devoted to gynecology dealing more particularly with pelvic floor damage, postpartum uterine displacements and their treatment, tumor growths complicating pregnancy and ectopic pregnancy and diseases of uterine cervix. The work is somewhat different from the usual books devoted to this subject but the differences are in the way of improvement. The publishers have maintained their usual high standards in illustrations which are a distinct advantage to the text. This volume is recommended particularly to the obstetrician.

PHYSICAL DIAGNOSIS, by Ralph H. Major, M.D., Professor of Medicine in the University of Kansas, with 427 Illustrations. Philadelphia and London: W. B. Saunders Company, 1937.

In this book is found a description of the various procedures usually discussed in a book of this type. Especial attention might be called to the chapter on Pain and its location as a means of arriving at a diagnosis. This appears to be a valuable addition to a work on physical diagnosis, not usually found. Special mention should also be made of the chapter on General Inspection. Here we find discussed such factors in diagnosis as posture, gait, speech, stature, movements, et cetera, which are observed, when viewing the patient as a whole. Likewise the chapter on Examination of the Head and Neck is noteworthy, because, in it, the student is taught many things that may be acquired by a careful examination of this region of the body. Rather more attention is given to the examination of the abdomen, genitalia and the extremities, than is usually found. A short chapter is devoted to the examination of the nervous system. This phase of diagnosis, which is so often neglected might well be given more attention.

The book is well written and throughout the work many fine illustrations amplify the lessons of the text.

AN INTRODUCTION TO GENERAL PRACTICE. By E. Kaye Le Fleming, M.A., M.D., Chairman of Council, British Medical Association. Direct Representative, General Medical Council. Chairman of the Conference of Local Medical and Panel Committees, 1925-30. Chairman, Representative Body, B. M. A., 1931-1934. Baltimore: William Wood & Company, 1936. Price, $2.00.

The title of this little book is somewhat ambiguous. The author, however, does not discuss the various diseases the general practitioner is called upon to treat. It is rather a book of advice to the young man entering upon the general practice of medicine. It deals with the many so-called socialized and financial aspects of the subject. While it is written particularly for the young man entering the practice of medicine in Great Britain, there are many things in it of value to the American general practitioner. Where it does not bear directly upon the American physician's work, it will at least afford him an interesting account of such things as the panel practice of medicine as it is in Great Britain. The work is written in an easy, one might say almost conversational, style.

THE 1936 YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY. Neurology edited by Hans H. Reese, M.D., Professor of Neurology and Psychiatry, University of Wisconsin Medical School, Psychiatry edited by Harry A. Paskind, M.D., Ph.D., Assistant Professor of Nervous and Mental Diseases, Northwestern University School of Medicine; Attending Neurologist, Evanston Hospital; and Endocrinology edited by Elmer L. Sevringhaus, M.D., Associate Professor of Medicine, University of Wisconsin Medical School. The Year Book Publishers, Incorporated, 304 South Dearborn Street, Chicago. Price, $3.00.

This work discusses the 1936 advances, whatever they may have been, in the domain of neurology and psychiatry. The volume also includes a section on endocrinology. Most of the advances of 1936 in all the departments of medicine and surgery are not to be found in the various textbooks. It is only by careful and judicious sifting of the periodic literature on the phases of the various subjects dealt with that it is possible to produce the 1936 Yearbook. We have had occasion to comment on other numbers of this series, and will repeat in substance that the publishers are to be congratulated on the enterprise and the authors are to be commended upon the thoroughness in judgment with which they have accomplished their task.

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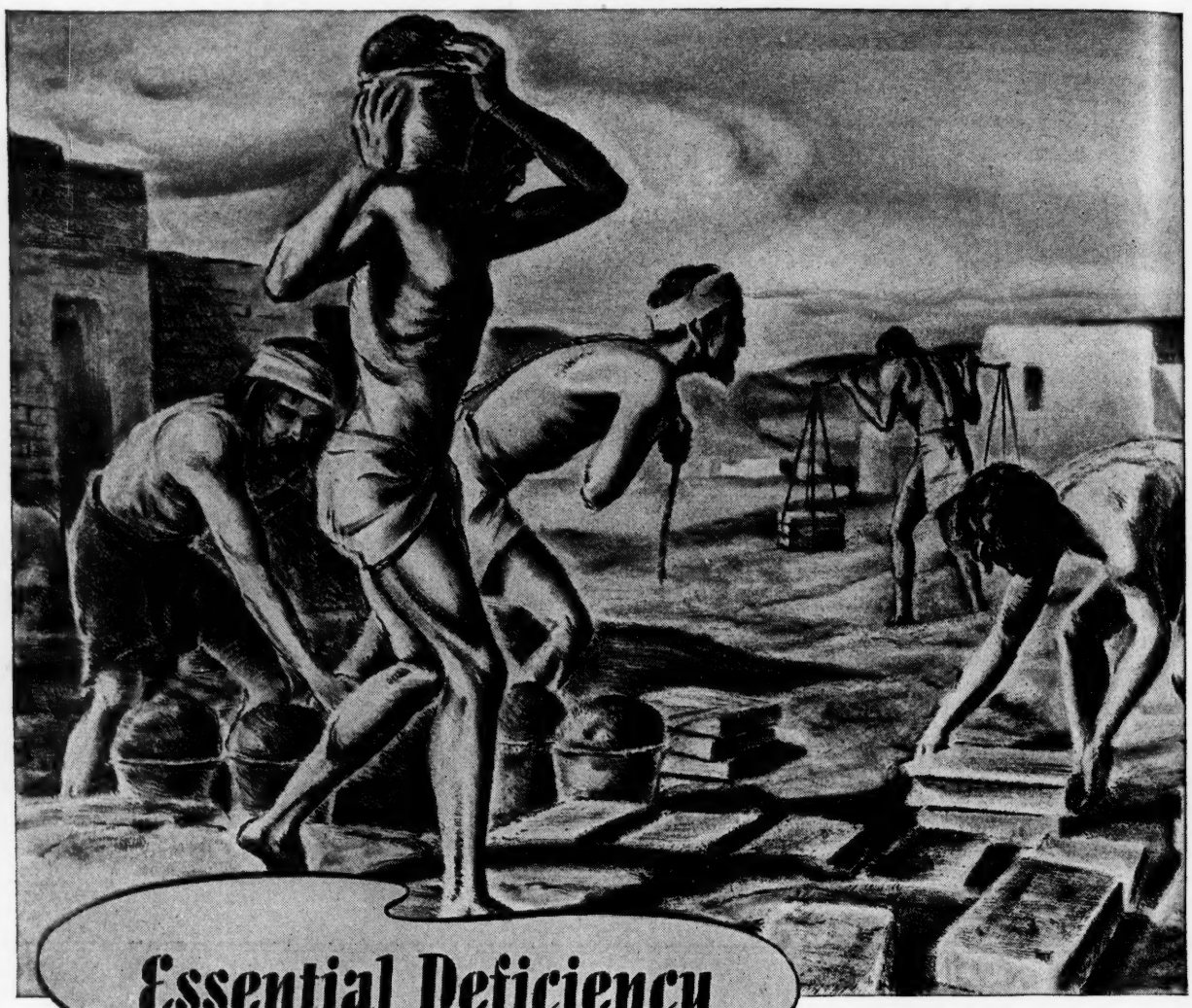

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